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BUDGETARY ISSUES AFFECTING THE GREAT LAKES BASIN

HEARING

BEFORE THE

TASK FORCE
ON COMMUNITY AND NATURAL RESOURCES

OF THE

COMMITTEE ON THE BUDGET
HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

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CONTENTS

Statement of:

Page
- Beeton, Alfred M., director, Michigan Sea Grant College Program 65
- Elder, Jane E., Midwest representative on behalf of the Sierra Club 34
- Henry, Hon. Paul B., a Representative in Congress from the State of Michigan 9
- Hopkins, Ed, environmental policy assistant to Gov. Richard F. Celeste of Ohio 17
- Jackson, John, Canadian-at-large, Great Lakes United and Friends of the Earth Canada 72
- Martin, Thomas D., director, Office of the Great Lakes, Michigan Department of Natural Resources 14
- Miller, David, executive director, Great Lakes United 40
- Nowak, Hon. Henry J., a Representative in Congress from the State of New York 2
- Quigley, Michael A., ecologist, Ecosystem and Nutrient Dynamics Group, NOAA, Great Lakes Environmental Research Laboratory, and president, local 3908, American Federation of Government Employees 61
- Schmidt, Wayne, staff ecologist, on behalf of the Michigan United Conservative Clubs 37

Additional information submitted for the record by:

- Beeton, Alfred M., prepared statement 67
- Elder, Jane E., prepared statement 36
- Hopkins, Ed:
  - Prepared statement 20
  - Initiative Two (to implement a balanced Lake Erie and Ohio River Resource Management and Protective Program) 33
  - Initiative Three (to manage effectively Ohio's excess water) 34
- Jackson, John, prepared statement 74
- Martin, Thomas D., prepared statement 15
- Miller, David:
  - Prepared statement 42
  - International Union, United Automobile, Aerospace & Agricultural Implement Workers of America—UAW, letter dated October 2, 1985 43
  - The Great Lakes Congressional Agenda (Federal Budgetary Needs for the Great Lakes Basin) 44
- Nowak, Hon. Henry J., Federal Investment in Great Lakes Water Quality, from Notheast-Midwest Institute 5
- Quigley, Michael A., prepared statement 63
- Schmidt, Wayne, prepared statement 39

H261-1

BUDGETARY ISSUES AFFECTING THE GREAT LAKES BASIN

THURSDAY, OCTOBER 3, 1985

House of Representatives,
Task Force on Community and Natural Resources,
Committee on the Budget,
Washington, DC.

The task force met, pursuant to notice at 9:40 a.m. in room 210, Cannon House Office Building, Hon. Howard Wolpe (chairman of the task force) presiding.

Mr. Wolpe. The hearing will come to order.

Lake Michigan, Lake Superior, Lake Huron, Lake Ontario, Lake Erie. Together these five inland bodies of fresh water, appropriately named the Great Lakes, constitute one of the natural wonders of the world and a resource of tremendous national and binational importance.

With 5,000 miles of U.S. coastline bordering eight States, the Great Lakes contain 95 percent of the Nation's fresh water and are heavily utilized by people and major industries for water, power, recreation, economic growth, and jobs.

Over 24 million Americans depend upon the Great Lakes for their daily supply of drinking water. More than 220 million gallons of Great Lakes water is used every day for crop irrigation.

Major utilities every day use an average of 23 billion gallons of Great Lakes water to generate power. And an additional 13 billion gallons are used daily in direct support of manufacturing.

Moreover, the Great Lakes support a multibillion dollar tourism industry and are part and parcel of a multibillion dollar merchant marine economy.

The lakes are vast and deep and powerful. They play an integral part in the economies of eight States and two Canadian Provinces. But, the lakes, despite their size and strength, are vulnerable. Today, the Great Lakes are in trouble, and that is cause for concern.

Raw sewage dumping has had a distressing effect upon water quality, and new revelations that ground water contamination from superfund sites surrounding the basin may be leaching into the lakes represents a new and potentially frightening source of contamination.

Ecologists have documented the severe environmental effects of Great Lakes pollution upon indigenous wildlife. And some public health officials are warning that children and expectant mothers should avoid eating Great Lakes fish.

Elaborate diversion schemes threaten to drastically affect water quantity levels in each of the five Great Lakes, an event that could adversely affect wetland habitats, Great Lakes navigation, and the generation of hydroelectric power.

Careful stewardship of the Great Lakes is, in my view, an important national concern. Nonetheless, Federal support for Great Lakes research and the application of appropriate environmental safeguards has been waning.

In each of the last 5 years, the administration has proposed disproportionately large cutbacks in virtually every program vital to the conservation and preservation of the Great Lakes basin. And, while Congress has been able to restore many of these funds, the bottom line is that fewer real dollars are spent on Great Lakes research and conservation today than were spent in 1972.

This hearing of the Task Force on Community and Natural Resources of the Budget Committee, has been called to examine the impact of Federal budgetary decisions upon efforts to preserve and protect the Great Lakes basin. Over the course of the next 2 hours, we will investigate the adequacy of Federal support for the enforcement of existing environmental law, basic research, water quality and quantity monitoring and control, and Great Lakes developmental efforts.

It is my hope that this hearing and the record of information it develops will foster within the Congress a better understanding of the unique problems that face the Great Lakes, and the kind of national response that is necessary and appropriate.

I am very pleased now to welcome as our first panel, two of my distinguished colleagues within the Congress, Congressman Henry Nowak and Congressman Paul Henry.

STATEMENT OF HON. HENRY J. NOWAK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. Nowak. Thank you very much, Mr. Chairman. I am delighted to be here this morning and welcome the opportunity to contribute to the task force's hearing on the subject of the Federal budgetary commitment to the protection, conservation, and proper development of the Great Lakes basin.

As a representative from one of the Great Lakes States, I am deeply concerned about the quality and about the continuing preservation and protection of the environmental quality and resources of the Great Lakes.

Fifteen years ago, it was widely believed that the Great Lakes were dying. My own personal experience with Lake Erie—which borders on my home city of Buffalo, NY—once termed the "dying lake," now has been cleaned up and revitalized as a swimmable and fishable fresh water resource.

Since 1972, more than $14 billion has been invested in the restoration of the Great Lakes, due to the unprecedented bilateral commitment by the United States and the Canadian Governments at the Federal and State/Provincial levels. Thanks to these investments in sewage treatment plants on both sides of the border, we have markedly reduced the level of phosphorus and other pollutants in the Great Lakes.

While we have by no means finished the job of controlling these contaminants, our commitment to persist is strong.

That commitment is reinforced, of course, as new knowledge expands our awareness of the challenges confronting the Great Lakes. For example, we now know that fertilizers which wash off farmland into the Great Lakes may be nearly as big a problem as sewage discharges used to be.

However, there is no denying we have made real progress. The water is beginning to breath again and we are even looking forward to the emergence of a tremendous sportfishing industry in Lake Erie. A few years ago that would have seemed pure fantasy.

However, we cannot afford to rest on these laurels. Our scientists advise us that the Great Lakes face an even more insidious threat from toxic contaminants. More than half the toxic hotspots—areas EPA has identified as suffering from particularly acute contamination—are in our Great Lakes region.

In some cases, these toxic contaminants have seeped into the sediments, making their removal potentially hazardous.

As a Representative from New York, I am pleased that we are moving to attack the toxic contamination problem in the Niagara River. New York State recently provided $1.8 million that will be used in part to complete investigations of 11 sites believed to be sources of river pollution.

EPA also has pledged an additional $5 million for this multiyear cleanup and Environment Canada is strongly supporting a rapid, effective, and permanent remedial effort.

As a member of the House Public Works Committee, which is a point of origin for reauthorizing the Clean Water Act—a process now underway with similar proposals having passed both Houses and awaiting conference—I am pleased to report that we are taking concrete steps to address toxic pollution. Our bill would require EPA to set numerical criteria for toxic pollutants to guide permit writers and also would do the following:

It would establish a new grant program to help States set nonpoint pollution control programs.

It would maintain strict pretreatment standards to keep toxic materials out of the municipal sewage systems.

It would also tighten up on water quality standards for toxic hotspots.

As important as these steps would be, however, I do not believe they are enough to control the toxic contamination in a watershed as large and as complicated as the Great Lakes.

We have already learned that we originally underestimated the role that nonpoint pollution played in dumping phosphorus into the lakes. Imagine how much more challenging it will be to evaluate the sources and impact of thousands of toxic compounds coming in from so many different places and directions.

That is not to say, however, that we should spend the rest of our lives simply researching the problem. But we ought to try to make our pollution-control decisions within a comprehensive research and management framework for the Great Lakes watershed.

This is really not a new idea, Mr. Chairman. It has been recommended by the International Joint Commission and is reflected in the United States-Canadian Water Quality Agreement. That agreement clearly recognizes that pollution does not respect either national or local boundaries.

I have tried in the Public Works Committee to provide that kind of a comprehensive framework by adding a Great Lakes management provision to the Clean Water bill. My amendment would be an important addition to our cleanup arsenal.

It represents, I believe, a serious effort to target spending within the Environmental Protection Agency to provide support for the ambitious goals embodied in the Water Quality Agreement.

Briefly, this amendment and section would do the following:

It provides explicit recognition of the Water Quality Agreement by the U.S. Congress for the first time.

It would designate EPA's Great Lakes program office as the lead agency responsible for meeting the goals of the agreement, and it provides $60 million during the next 5 years to upgrade that office. That $12 million per year average is more than twice as much as this office has received in any single year recently.

It would also direct the Great Lakes program office to work with Federal and State agencies to develop a management strategy to meet the goals of the Water Quality Agreement.

Additionally, it would require the establishment of toxics monitoring and surveillance network for the Great Lakes, and recommends that EPA begin studies on the feasibility of toxic sediment removal at five specific sites in the Great Lakes. Those sites would be Saginaw Bay, MI; Sheboygan Harbor, WI; Grand Calumet River, IN; Ashtabula River, OH; and Buffalo River in Buffalo, NY.

It would also continue, and would provide an expanded role for NOAA by requiring that that agency establish a comprehensive environmental data base for the Great Lakes, and a research exchange to make it easier to retrieve information for investigative and management purposes.

Additionally, it requires periodic reports to Congress regarding progress made in implementing the goals of the Water Quality Agreement.

The last provision, frankly, is intended to get the Congress more directly involved in a sustained monitoring of progress of the Great Lakes cleanup. It will help ensure that we are as interested in crisis prevention as we are in crisis resolution.

A major component of the Great Lakes cleanup effort has been the Sewage Treatment Construction Grants Program as you well know. Since 1972, the United States and Canada have spent a total of $7.6 billion to improve or replace 1,079 sewage treatment plants along the shores and tributaries of the Great Lakes.

It is important to note that the Clean Water Act as passed by the House, retains the current formula for allocating sewage treatment construction grant funds to the States. Unfortunately, the Senate legislation proposes to amend the formula in such a way as to reduce funding to Great Lakes States by over $130 million.

When the House and Senate meet to resolve those differences in the next few weeks, I am hopeful, of course, that the House formula will prevail.

In conclusion, Mr. Chairman, I certainly commend the task force for holding this session today to focus attention on the Great

Lakes. I am hopeful that the issues raised today will be thoroughly considered in your future budget deliberations.

[The following material was submitted for the record by Mr. Nowak:]

FEDERAL INVESTMENT IN GREAT LAKES WATER QUALITY

(From Northeast-Midwest Institute)

Expenditures for water quality programs in general, and specific Great Lakes programs in particular, are one important measure of the federal commitment to Great Lakes water quality. With this in mind the following data is presented on expenditures for recent fiscal years and projections for current and future years for such agencies and programs.

Funding data on water quality programs for the Great Lakes is often not available in federal agency budget documents. Budgets for Great Lakes laboratories and agencies are available, however, and are presented in Table I.

Table II presents the major federal grant programs to states in support of water quality programs. Where state data was available, the aggregate total for the eight Great Lakes states is shown. Every state but one (Michigan) has watersheds and tributaries outside of the Great Lakes area, so only a portion of these program expenditures directly affect the Great Lakes. For other state grant programs, only national figures were available. In these cases the fund amounts obviously affect the level of expenditure in the Great Lakes, but the precise impact is not known.

Arguably the most important water quality program to the Great Lakes is the Wastewater Construction Grants Program. In terms of size, these grants dwarf other programs, and enable the building and improvement of wastewater treatment facilities which would not otherwise be possible. Table III presents extensive state-by-state figures, comparing state funding levels under the existing allocation formula to funding levels under a Senate revised formula. Both the formula to be used for allocation, and the total level of funding for the next several years, are issues yet to be resolved in the final stages of the legislative process. Since these funds are allocated by states, they too are only partially spent in the Great Lakes area.

Table IV presents general U.S. EPA expenditures and budgeted amounts for EPA headquarters and regional offices. Their impact on Great Lakes water quality is important because they determine the administrative and research capabilities of the agency, affect administration priorities, and influence the overall quality and effectiveness of the federal program.

TABLE I.—GREAT LAKES LABORATORIES AND PROGRAM OFFICES

[In millions of dollars]

Agency	Funds appropriated by Congress		Administration request, fiscal year 1986	House appropriations bill	Senate appropriations bill
	Fiscal year 1984	Fiscal year 1985			
Department of Commerce/NOAA: GLERL	4.0	3.8	0	3.8	3.8
U.S. EPA:					
GLNPO	4.0	5.2	4.9	5.3	6.9
Large Lakes Laboratory	2.5	2.5	1.2	2.2	NA
Department of Interior: Great Lakes Fishery Laboratory	2.5	2.8	2.8	3.3	NA
Total	13.0	14.3	8.9	14.6	NA

Note: NOAA=National Oceanic and Atmospheric Administration; GLERL=Great Lakes Environmental Research Lab; GLNPO=Great Lakes National Program Office.

Source: Northeast-Midwest Institute, Fred Moseley, October 1985.

GREAT LAKES AGENCY PROGRAMS

(Table I)

ENVIRONMENTAL PROTECTION AGENCY

Great Lakes National Program Office, Chicago, IL

Responsible for developing Great Lakes Monitoring and Surveillance Plan.
Supports activities of U.S.-Canadian International Joint Commission.
Provides information and monitoring in support of Water Quality Agreement.
Evaluates effectiveness of control programs on Great Lakes water quality.
Provides EPA liaison for non-point pollution control demonstration projects.
Responds to requests for technical and policy information.

Large Lakes Lab, Grosse Ile, MI

Support Great Lakes National Program Office.
Monitor water quality.
Air quality sampling.
Track effects of pollutants on fish populations.
Assess water quality improvements.
Generally support GLENPO's requirements under Great Lakes Water Quality Agreement.

DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

Great Lakes Fisheries Research Lab, Ann Arbor, MI

Water quality sampling.
Regulate fishing and fisheries.
Protect spawing and nursing grounds.
Study effects of contamination on fish.
Monitor survival of planted lake trout.
General environmental monitoring.

DEPARTMENT OF COMMERCE, NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION

Great Lakes Fisheries Research Lab, Ann Arbor, MI

Physical concentrations and chemical reactions of pollutants.
Ice coverage in winter.
Physical circulation of water, especially regarding navigation.
Hydrology of the Great Lakes Basin.
Nature of winds at Great Lakes.
Other physical, chemical and biological aspects of the Lakes.
Transference of research to other coastal areas, fresh and salt water.
Cooperative programs with state universities and agencies.

TABLE II.—STATE GRANTS FOR WATER QUALITY PROTECTION PROGRAMS

[In millions of dollars]

Act	Expenditures, fiscal year 1984 (actual)	Expenditures, fiscal year 1985 (projected)	Administration request fiscal year 1986	House appropriations bill	Senate appropriations bill
Environmental Protection Agency: [1]					
Sec. 106, CWA	16.4	16.7	16.2	NA	NA
Drinking water technical assistance	6.4	7.2	7.4	NA	NA
Underground injection control (UIC)	1.7	1.6	1.8	NA	NA
Total	24.5	25.5	25.4	NA	NA
Department of Commerce/NOAA: [2]					
Coastal zone management CZM [3]	30.0	36.0	6.0	36.0	37.0
Sea grant [4]	37.0	39.0	0	39.0	39.0
Total	67.0	75.0	6.0	75.0	76.0

[1] EPA progrm figures are for the eight Great Lakes States.

[2] Budget figures are for national program for CZM and Sea Grant. Great Lakes States receiving CZM grants are Michigan, New York, Pennsylvania, and Wisconsin.

[3] Figures for the basic State grants programs, sect. 306 and 306A.

[4] Grants to projects in Great Lakes States totaled about $6.5 million in fiscal year 1985.

Source: Northeast-Midwest Institute, October 1985.

STATE GRANTS FOR WATER QUALITY PROGRAMS FOR THE EIGHT GREAT LAKES STATES

(Table II)

CLEAN WATER ACT, SECTION 106

State activities primarily funded under Section 106 include National Pollutant Discharge Elimination System (NPDES) permitting (which sets limits on the amounts and concentrations of pollutants allowed), ambient and source monitoring of toxics and conventional pollutants, enforcement, ground water program strategy development, and administration of state programs.

DRINKING WATER, TECHNICAL ASSISTANCE

These funds support programs to supervise the application of primary drinking water regulations by public water systems. Other activities supported include gauging the public health risks associated with ground water contamination incidents, analytical services, sanitary surveys, training, data management, disease surveillance and on-site technical assistance. Additionally the grant funds support activities such as data collection, management, and training.

UNDERGROUND INJECTION CONTROL PROGRAM GRANTS

These funds support programs to protect underground sources of drinking water from contamination through underground injection. In states to which program authority has been delegated, the funds support state program activities. In other states EPA utilizes these funds for direct implementation activities such as permitting of wells, surveillance and compliance functions.

COASTAL ZONE MANAGEMENT

The Coastal Zone Management Act provides assistance to states which have a federally approved Coastal Zone Management program. Typical programs include harbor and port redevelopment which contribute to a healthy coastal environment, and measures designed to protect estuaries. Currently the federal share is 80 percent, matched by 20 percent local share. The House-approved reauthorization would reduce the federal share to 50 percent, while the Senate bill reported from committee retains the 80/20 split. Michigan, New York, Pennsylvania and Wisconsin are the only four Great Lakes states which have federally approved programs.

SEA GRANT

The program is intended to stimulate and develop the wise use of resources of the oceans and the Great Lakes. It offers a three-pronged program of research and development, extension and training, and extension/advisory services. At least one-third of project monies must be supplied locally, with a maximum two-thirds share provided by the federal grant.

Programs which qualify include those which promote aquaculture and the improvement of fish habitat and stocks, coastal erosion prevention, and environmental scientific studies such as the effects of certain contaminants on fish species. All of the Great Lakes states participate in this program directly or indirectly.

TABLE III.—WASTEWATER CONSTRUCTION GRANT ALLOCATIONS FOR THE 8 GREAT LAKES BASIN STATES

[In millions of dollars]

States	Annual total [1]	5-year total (col. 1 × 5)	Fiscal years 1986–88 [2]	Fiscal years 1989–90 [3]	Fiscal years 1986–90 [4]	Total losses over 5-year period (col. 2 minus col. 5)	Total for 5 years [5]	Great Lakes Basin States (col. 2 minus col. 7) [6]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Illinois	109.0	545.0	93.1	87.2	453.7	−91.3	276.6	−268.4
Indiana	58.1	290.5	49.6	46.5	273.5	−48.7	147.4	−143.1

TABLE III.—WASTEWATER CONSTRUCTION GRANT ALLOCATIONS FOR THE 8 GREAT LAKES BASIN STATES—Continued

[In millions of dollars]

States	Annual total [1] (1)	5-year total (col. 1 × 5) (2)	Fiscal years 1986–88 [2] (3)	Fiscal years 1989–90 [3] (4)	Fiscal years 1986–90 [3] (5)	Total losses over 5-year period (col. 2 minus col. 5) (6)	Total for 5 years [4] (7)	Great Lakes Basin States (col. 2 minus col. 7) [5] (8)
Michigan	103.6	518.0	88.5	82.9	431.3	−86.7	263.0	−255.0
Minnesota	44.3	221.5	37.8	35.4	184.2	−37.3	112.4	−109.1
New York	267.4	1,337.0	228.4	213.9	1,113.0	−224.0	678.6	−658.4
Ohio	135.7	678.5	115.9	108.5	564.7	−113.8	344.3	−334.2
Pennsylvania	95.5	477.5	81.5	76.4	397.3	−80.2	242.3	−235.2
Wisconsin	65.1	325.5	55.7	52.8	272.7	−52.8	165.3	−160.2
Total	878.7	4,393.5	750.5	703.6	3,690.4	−734.8	2,229.9	−2,163.6
Percent of national total	36.6	36.6	31.3	29.3	30.8		37.2	

[1] Under existing formula and under H.R. 8, annual allocations assuming $2.4 billion.

[2] Under S. 1128, annual allocations for fiscal years 1986–88, assuming $2.4 billion annual total.

[3] Under S. 1128, total 5-year allocations for fiscal years 1986–90, assuming $2.4 billion annual total.

[4] Administration budget proposal grant program phaseout by 1990, total fiscal years 1986–90 Federal budget expenditures of $6 billion for 5 years.

[5] Administration budget total losses.

Source: Northeast-Midwest Institute, Fred Moseley, October 1985.

WASTEWATER CONSTRUCTION GRANT ALLOCATIONS FOR THE EIGHT GREAT LAKES STATES

(Table III)

Under the Clean Water Act the U.S. EPA distributes matching grants to state and local governments to build and to upgrade wastewater treatment facilities needed to meet water quality standards. Currently the federal share is 55 percent and the "local" share 45 percent. The program has been vital in the effort to stop the degradation of the Great Lakes because of the population concentrations in the U.S. Great Lakes Basin.

At issue in the reauthorizing legislation of the 99th Congress are both the levels of funding for the program and the allocation of the funds which are authorized and appropriated. The allocation is made according to formula established by Congress in the authorizing legislation, and may take into account such factors as demonstrated need, population, and political considerations.

FUNDING LEVELS

Since 1981 the program has been funded at $2.4 billion per year, which was projected to extend well into the 1990s. However overall budget considerations have resulted in widespread agreement to curtail the grant program at an earlier date, and in schemes to replace federal grants with loans to be supplied out of state revolving loan funds which the federal government would help to establish.

The administration's 1986 budget request called for a fiscal year 1986 funding level of $2.4 billion, but for ending the program by 1990. Funding levels would be progressively reduced beginning in fiscal year 1987, and the total federal expenditure from fiscal year 86 to its conclusion would be $6.0 billion.

H.R. 8 would maintain grant funding at $2.4 billion annually from fiscal year 86—fiscal year 90. Also beginning in fiscal year 86 would be an additional $0.6 billion yearly in grants to states to begin establishing their revolving loan funds. In fiscal year 91–94 grants to state revolving loan funds would take the place of direct facilities grants, gradually tapering off through fiscal year 94.

S. 1128 would maintain grant funding at $2.4 billion annually from fiscal year 86—fiscal year 88, and drop it to $1.2 billion annually in fiscal year 89 and 90. Grants to state revolving loan funds commence in fiscal year 88 at $1.2 billion annually, and after rising to $2.4 billion in fiscal year 91, would, like the House version, taper off through fiscal year 94.

ALLOCATION FORMULAS

H.R. 8 incorporates and would continue the existing allocation formula. The current formula was established in 1981 as part of the Clean Water Act Amendments, at which time differing House and Senate versions were "resolved" by agreeing to calculate each and then settling on the midpoint between them.

S. 1128, adopted by the Senate, employs a revised formula. The formula is extraordinarily complex, placing states into one of three groupings and utilizing logarithms to minimize the differing grant amounts within two of the groups. The formula includes a "hold harmless" provision, so that states which lose under the revised formula are guaranteed 85 percent of their 1985 allocation in each fiscal year 1986-1988, and 80 percent of their 1985 allocation in each fiscal year 1989 and 1990. States which gain under the revised formula are limited to a 20 percent increase.

COMPARISON OF CONSTRUCTION GRANT PROVISIONS

Table III compares the dollar allocations to Great Lakes states under the existing—and H.R. 8—formula, with that under the revised Senate formula. To facilitate comparison the allocation of $2.4 billion annually is shown from fiscal year 86—fiscal 90. This ignores the $0.6 revolving loan grant authorized by H.R. 8 for these years, and includes the $1.2 billion annual grant to state revolving loan funds in fiscal year 89 and 90 authorized by S. 1128. By so doing the impact of the formula differences alone, irrespective of funding levels, can be illustrated.

TABLE IV.—U.S. EPA NATIONAL PROGRAM EXPENDITURES AND BUDGET FOR WATER QUALITY PROGRAMS

[In millions of dollars]

Program	Expenditures, fiscal year 1984	Expenditures (projected), fiscal year 1985	Administration request, fiscal year 1986	House appropriations	Senate appropriations [1]
Salaries and expenses	89.7	98.9	95.7	NA	NA
Abatement control and compliance	114.1	121.3	131.3	NA	NA
Research and development	9.4	15.0	11.6	NA	NA
Total	213.2	235.2	238.6		

[1] House and Senate appropriations bills do not break out media-specific numbers such as for water quality. Proposed appropriations for EPA in both appropriations bills would, however, increase over fiscal year 1985.

Source: Northeast-Midwest Institute, October 1985.

Mr. **Wolpe**. Thank you very much, Mr. Nowak, for that testimony.

Let me express my personal appreciation for the leadership that you have provided on this question, not only through your work on the Public Works Committee, but also through your chairmanship of the Northeast-Midwest Congressional Coalition's Task Force on Water Resources. That has been very important.

Now, I am also pleased to welcome my distinguished colleague from my adjacent, neighboring district within Michigan, Paul Henry, who was very aptly involved in environmental matters during his tenure as a State legislator, and has carried that interest to the Congress. Mr. Henry.

STATEMENT OF HON. PAUL B. HENRY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. **Henry**. Thank you, Mr. Chairman. I appreciate the opportunity to address the issue of the Federal budget commitment to the protection, conservation, and development of the Great Lakes.

I commend you personally, and the members of your panel, for your interest in the subject of this hearing, particularly because the programs affecting the Great Lakes cut across the jurisdictional lines of several of the standing committees of the House. And so this opportunity to get the whole picture of the Great Lakes program is particularly useful and important.

Quite frankly, if I can add as an aside, particularly as a freshman Member of the Congress, trying to involve himself in these issues, it has been very difficult, because of the competing, overlapping, and sometimes even isolated components of these programs to get a full understanding of what we are doing. And I commend you particularly for trying to bring the pieces together in a way which will be important to all of us in more effectively bringing together our concerns over the future of the Great Lakes.

Just as we have asked the agencies and the departments of the executive branch to take a more coordinated approach to Great Lakes concerns and programs, it is also important that we in the Congress do so both to ensure the effectiveness and efficiency of the program, and to raise the profile and awareness and importance of the Great Lakes as a national as well as a regional resource.

It is important that as we consider the Federal budget commitment to the Great Lakes, that we note the progress that has been made in terms of quality and protection of the Great Lakes over the past years, due to the combined efforts of Federal, State, and local government.

All of us from the Great Lakes area well remember the spontaneous combustion of effluents in the waters flowing into Lake Erie not so many years ago, and the numbers of dead fish washing up on the shore of Lake Michigan, not so many years ago. While there is much to be done to maintain and improve the water quality, much progress has been made.

I think each of us in Congress has struggled over the past month with the question of how do we deal responsibly with the continuing needs of current Federal programs and respond at the same time to the national problem of containing the Federal deficit.

Obviously, each of the Federal programs has to be scrutinized in light of our first priority of getting the deficit under control. But, it is important to remember that the Great Lakes are both a heritage and a resource, and that our spending on the programs which protect the lakes are an investment in the future not only of the Great Lakes basin, but of our Nation. As we increasingly are realizing water is our most precious resource, and is essential for manufacturing, for farming, for tourism, and for the quality of life.

Given that, I would like to suggest that we need to emphasize our commitment to the continued funding of our existing Great Lakes programs.

I note for example, that Michigan directly is involved with the Great Lakes Environmental Research Laboratory, as you are well aware; the Michigan Sea Grant Program; the Great Lakes Fishery Laboratory of the U.S. Fish and Wildlife Service—already we have talked about three different committee jurisdictions and the U.S. Environmental Protection Agency's Large Lakes Research Station in Grosse Ile.

The importance of the Clean Water Act and amendments that have been suggested by Congressman Nowak are critical as is the entire Superfund issue in the Energy and Commerce Committee.

Again, I commend you for trying to focus comprehensively on the issue to create a unified body of knowledge which I think is going to be critical to those of us who share this concern in bringing the issue in a more persuasive way to the Congress.

Thank you very much for this opportunity.

Mr. WOLPE. Thank you very much.

I should indicate that this is the first of a two-phased effort trying to focus attention on the Great Lakes issue. We want to—in the spring—follow up in the course of the budget process, by bringing in administration witnesses, to take a really good look at their perceptions about what is happening on the executive end. What we are trying to do right now is to understand the dimensions of the problem in some kind of coherent way so that we will be able to ask more informed questions when we get to that budget process down the road.

Mr. Nowak, one of the major concerns that you have focused upon has been the administrative lead role that you believe the EPA should play. That is one aspect of the amendment that you have built into the legislation.

Could you lay out in a little more detail what it is that led you to focus on that concern and why you feel it is important to strengthen the role of EPA in the cleanup of the Great Lakes?

Mr. NOWAK. I think from our own observations in trying to reach the problem that my colleague talked about here, and the pure coordination of a diverse and fragmented agency, everybody doing their own thing without relating to the whole problem, trying to bring it all together, there has been in recent years criticism of these fragmented programs by the International Joint Commission, who has repeatedly criticized the lack of that coordinated effort among the Federal and State Governments in accelerating our anti-pollution programs.

By providing EPA with a clearcut responsibility here and adequate resources to meet those responsibilities, which is very important also, I think, we will be able to make greater progress in Great Lakes water quality.

Additionally, there has been a GAO study [General Accounting Office] study in May of 1982. I believe they found on the Great Lakes Program which divide that whole responsibility among 14 different Federal agencies and 8 States, were fragmented and really inadequate funding.

So we are hopeful to meet those goals in legislation I have proposed. And of course, hopeful that the House adopts it.

Mr. WOLPE. What kind of administration reaction have you had to the proposals that you have already gotten through the House?

Mr. NOWAK. Of course, the bill has passed the House and we are meeting with the Senate.

As I mentioned in my testimony, the funding of the Construction Grant Program is very important. That, along with the $60 million, I think, will make a large difference in the whole effort to bring into focus and have adequate coordination so that we can get the most bang in research and development dollars for that total effort in the Great Lakes. Because, as you know, anything that seeps in or is put into Lake Michigan, or Lake Ontario, affects Lake Erie. And, as the Canadians, our friends from Canada found out, anything you put in the Niagara River flows over the falls into the gorge and out into Lake Ontario.

So, we have really to have a coordinated effort if we are going to make any progress. One State cannot do it, one Federal agency cannot do it. It has to be brought together. And I hope that we have provided the means.

Mr. **Wolpe**. Are the agencies themselves beginning to recognize that? Or, is there substantial resistance to——

Mr. **Nowak**. The legislation will mandate that EPA be the lead agency for the first time, and make the coordination between the different—the 14 that are out there that are working in research, bringing together of the State programs who may be working in one area because they have one problem. But they don't interface that with the other problems in the other Great Lakes or the other agencies that may be doing some work that perhaps could be done better by another, and that information shared.

And that is really what we are trying to do with the amendment; get the coordination.

But you know, we can talk about coordination. But, unless we provide that $60 million over the next few years, you are not going to be able to pull it all together. And, if we don't, we just won't get the progress that everybody is looking for.

Mr. **Wolpe**. Mr. Henry, when I was in the State legislature some years before your own time, this was not, frankly, a very focused issue. Many of my colleagues really weren't paying that much attention to Great Lakes issues.

I wonder if you could share your more recent experience within the State legislature and your interaction with Great Lakes legislatures? Is there a growing awareness of the significance of what is happening in the Great Lakes?

Mr. **Henry**. I appreciate that question, because I think it indicates the profound awakening and resurgence of interest in terms of the literally vital resource that the Great Lakes are to that region, and likewise to the Nation.

In fact, I think the Great Lakes States have awakened rather belatedly to what some of the other areas of the Nation saw before we did. It was always before our eyes, and we found those from afar looked a little more longingly on the value of that water, which we had taken for granted.

And, given the tremendous problems in terms of the long-range forecasts for water—first of all, the whole issue of water in and of itself as a resource has become, as you are well aware—and my colleague and all of us in the Great Lakes regions—our oil in the future. And second, the concern over protecting the quality of that water. Then there is the whole issue of diversion, not just because of the tremendous economic impact that it portends, in terms of what transfer might mean, but the tremendous danger to the ecosystem should such diversion take place.

And on that, all the Great Lakes are united; the Great Lake States and the Governors, regardless of party, and likewise the Provinces of Canada that are affected.

So, this has become really a matter of tremendous interstate cooperation, as well as international cooperation. This is now one of the dominant issues in the region.

The development of commercial fisheries, which has proceeded a little more quickly, I think, in Lake Michigan than further east, but is now making significant strides in the eastern Great Lakes as well. We have begun to see the development of a tremendous long-range commercial resource there, as well.

There is tremendous concern over ground water contamination as we become more aware of the interrelationship of ground water and the Great Lakes. And I would simply have to say this is one of the paramount issues.

I would also like with your leave, Mr. Chairman, to add one more observation to Congressman Nowak's insightful observations on the lack of administrative coordination and central focus.

One of the problems that we have had, of course, in the last several years, is that many of these programs have been zeroed out in budget proposals coming over to the Congress. And these agencies have had to spend so much of their time fighting for their own survival.

Congress, very comfortably with strong bipartisan support and in overwhelming numbers, has year after year after year been restoring those programs.

I would hope we could get beyond that point to give the agencies a little more administrative time to do the kinds of coordination that I think we all feel are important.

Mr. WOLPE. I certainly hope that that will be the case and the outcome of this process.

Let me thank you both very much for your testimony this morning.

Well, you hear the bells. I will invite the second panel to come forward. We have three panels this morning. We will receive testimony from the States of Michigan, Wisconsin, and Ohio. We will have, following the States panel, a citizens panel; and following that, a panel focused upon the issue of research.

Let me invite the three people who will be testifying on behalf of the three different States, to come forward at this point.

We have heard the bells. At this point I think we will recess the task force momentarily while we go vote and be back in about 10 minutes.

[After recess.]

Mr. WOLPE. The hearing will resume.

I am pleased now to welcome to the hearing Thomas Martin, director of the Office of the Great Lakes of Michigan's Department of Natural Resources; and Ed Hopkins, from the Office of the Governor of the State of Ohio.

Peter McAvoy of the Wisconsin Department of Administration, who had been scheduled to testify, will be unable to be personally present, but his testimony will be submitted for the record.

Let me indicate, I know, Mr. Martin, that you have a plane to catch and that you have to leave almost momentarily. So, please feel free to leave at any point during the course of this panel.

I would like to ask if both of you could condense your verbal testimony to about a 5-minute period so that we might have some time for questions and answers.

With that let me invite Mr. Martin to present his testimony.

STATEMENT OF THOMAS D. MARTIN, DIRECTOR, OFFICE OF THE GREAT LAKES, MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Mr. MARTIN. Thank you, Mr. Chairman. It is a particular pleasure for me to have the opportunity to appear before you. Your leadership on Great Lakes and environmental issues has long been appreciated in Michigan.

It was a particular pleasure to follow Congressman Henry and Congressman Nowak, both of whom have displayed leadership on these issues.

I don't think I need to tell this committee how important the Great Lakes are to the economy and ecology of our Nation. But, I would like to focus on how you can ensure that the Federal Government becomes an active partner in protecting our Great Lakes.

Our Nation has made many commitments for the protection of the Great Lakes. The 1909 Boundary Waters Treaty with Canada; the 1972 Water Quality Agreement and its 1978 analog are evidence of the lofty prosc we often give to the Great Lakes. Next year, the 1978 agreement will be reexamined, and our Nation's efforts will be opened for all to see.

I have no doubts that the Federal Government's efforts will be found wanting. Let me give just one example.

The 1978 Water Quality Agreement committed the Federal Government to cleaning up our Great Lakes waters. Despite the fact that five annexes of that agreement required the Federal Government to conduct Great Lakes research, this Federal administration has sliced research institutions budgets in half or completely during the past few years.

I think we all recognize the need to reduce the Federal deficit. But, it seems to me that the Reagan administration must either fund these research institutions, or repudiate the Water Quality Agreement.

I should note that Congress has acted responsibly in restoring the budgets of these institutions, but I think more remains to be done.

Congress is now considering the reauthorization of the Clean Water Act, and it contains a number of provisions of vital importance to the Great Lakes. This reauthorization offers us an opportunity to add coherence and teeth to our Great Lakes efforts.

A key provision to the Clean Water Act, indeed a vital part of the Great Lakes protection mosaic, is the Waste Water Treatment Grant Program. This program has been the single most effective Federal program in attacking the once rampant nutrient pollution problem. The recovery of Lake Erie stands as a testament to the effectiveness of this program.

Specifically, we are all very distressed about the proposed cuts in the allocation formula for the Great Lakes region that the Senate has proposed. By altering the traditional needs-based formula, the Senate would move resources away from protecting the Great Lakes, where 95 percent of our Nation's fresh surface water is stored. That just doesn't make sense.

In addition, we have explicit waste water treatment responsibilities under the Water Quality Agreement of 1978. Article VI sets out clear requirements for our Nation to fulfill, including "provision of financial resources to ensure prompt construction of needed facilities."

Please note that we missed the deadline for many of these facilities under that agreement.

Annex 3 of the agreement also calls for the control of phosphorus and other nutrients, a key function of waste water treatment programs.

Make no mistake about it, the Senate proposed allocation formula will hurt efforts to clean up Great Lakes water. Using Michigan as an example, the effectiveness of this proposal becomes clear. We have identified 16 communities in our State that must upgrade secondary treatment facilities by July of 1988 under the provision of the Clean Water Act. Another 35 facilities are under order or a permit schedule to upgrade their facilities. And 36 other projects have been identified as having a public health hazard.

All of these projects are waiting for the Federal Government to commit their share of the cost.

If the Senate formula is adopted, Michigan will be forced to delay construction of six needed facilities. In real terms, that means raw sewage will continue to be dumped into the Great Lakes.

I urge the House of Representatives to stand firm, to hang tough on their commitment to the traditional needs-based formula, and to the Great Lakes region.

A second important part of the Clean Water Act is the language contained in section 59, describing Great Lakes programs.

Congressman Nowak eloquently outlined them. They contain first the statutory authority for the Great Lakes National Program Office of the EPA to be the lead Federal agency for water quality programs in the Great Lakes. We believe that will add badly needed coordination and coherence to those Federal programs.

In addition, as Congressman Nowak and Congressman Henry pointed out, the Great Lakes Research Office it mandates, will provide those same functions for the investigative area of the Federal programs.

Both of these measures will serve to ensure that more than lip service is paid to the 1978 Water Quality Agreement.

Most importantly, this section prescribes action. Toxic pollutant control demonstration projects, a basin-wide monitoring and surveillance system, report cards on Federal efforts and a comprehensive data base for the Great Lakes are highlights.

Needless to say, these worthy programs will take money to implement. Section 51 authorizes $8 million for fiscal 1986 rising to $13 million in 1990. These authorizations must become appropriations for this Great Lakes initiative to succeed.

If these funds are allocated to an expanded Federal commitment to our region, I believe the States stand ready to aid in these efforts. Proper Great Lakes protection results from a partnership, a partnership that needs your active and strong cooperation.

[The prepared statement of Mr. Martin follows:]

PREPARED STATEMENT OF THOMAS D. MARTIN

Good morning, Mr. Chairman, members of the committee, ladies and gentlemen.

It is a particular pleasure for me to be able to appear before this group given Mr. Wolpe's distinguished leadership on environmental Great Lakes issues.

I don't need to tell this committee how important the Great Lakes are to the economy and ecology of our Nation. But I would like to focus on how you can insure the Federal Government becomes an active partner in protecting our Great Lakes.

Our Nation has made many commitments for the protection of the Great Lakes. The Boundary Waters Treaty of 1909, the 1972 Canada-U.S. Water Quality Agreement and its 1978 analog are evidence of the lofty prose dedicated to the Great Lakes. Next year, the 1978 agreement will be examined and Federal efforts to protect the Lakes will be there for all to see. I have no doubts present efforts will be found wanting.

Let me give you an example. The 1978 Canada-U.S. Great Lakes Water Quality Agreement committed the Federal Government to cleaning up our waters. Despite the fact five annexes of the agreement committed the Federal Government to conduct research, this administration consistently slices Great Lakes research budgets in half or even completely! We all recognize the need to reduce the Federal deficit but it seems to me the Reagan administration needs to fund research institutions or repudiate the agreement.

I should note that Congress has responsibly restored the budgets of these institutions but more remains to be done. Congress is now considering the reauthorization of the Clean Water Act and it contains a number of provisions of vital importance to the health of the Great Lakes.

The reauthorization of the Clean Water Act offers us an opportunity to prepare for more complete and comprehensive Federal efforts to protect this resource. A key provision of the Clean Water Act—indeed a vital component of the Great Lakes water protection mosaic—is the waste water treatment grant program. This program has been the single most effective Federal program in attacking the once rampant nutrient pollution problem. The recovery of Lake Erie stands as a testament to the program's effectiveness. Specifically, we are very distressed about the Senate's proposed cuts in the allocation formula for the Great Lakes region. By altering the traditonal needs-based formula, the Senate would move resources away from protecting the Great Lakes—where 95 percent of our Nation's fresh surface water is stored.

In addition we have explicit waste water treatment responsibilities under the Water Quality Agreement of 1978. Article VI sets out clear requirements for our Nation to fulfill including the "provisions of financial resources to ensure prompt construction of needed facilities". Please note that we missed the 1982 deadline in the agreement for some facilities. Annex 3 of the agreement also calls for the control of phosphorous and other nutrients—a key function of waste water treatment programs.

Make no mistake about it—the new allocation formula will hurt efforts for clean Great Lakes water. Using Michigan, the only State wholly within the Great Lakes drainage basin as an example, the effects of this proposal become clear. We have identified 16 communities that must upgrade to secondary treatment facilities by July of 1988 under the provisions of the Clean Water Act. Another 35 sites are under order or a permit schedule to upgrade their facilities. And 36 other projects have been identified as having a public health problem.

If the Senate formula is adpoted, Michigan will be forced to delay construction of six needed facilities. This means that raw sewage will continue to be dumped into the Great Lakes. I urge the House of Representatives to hang tough for the full restoration of the traditional needs based formula.

A second important part of the Clean Water Act is the language contained in section 59 concerning Great Lakes programs. First, it gives statutory authority to the Great Lakes national program office of EPA to be the lead Federal agency addressing Great Lakes environmental problems. We believe this will add badly needed coordination and coherence to Federal programs. In addition, the Great Lakes research office it mandates will provide the same functions for the investigative area of Federal programs.

Most importantly, this section prescribes action. Toxic pollutant control demonstration projects, a basin-wide monitoring and surveillance system, report cards on Federal efforts and a comprehensive data base for the Great Lakes are highlights. Needless to say, these worthy programs will take money to implement. Section 51 mandates $8 million for fiscal 1986 rising to $13 million in 1990.

If these funds are allocated to an expanded Federal commitment to our region, I believe the States stand ready to assist in these efforts. Proper Great Lakes protection results from a partnership—a partnership that needs your strong support.

Mr. WOLPE. Thank you very much, Mr. Martin.

Now, I would like to ask Mr. Hopkins to present his testimony.

STATEMENT OF ED HOPKINS, ENVIRONMENTAL POLICY ASSISTANT TO GOV. RICHARD F. CELESTE OF OHIO

Mr. HOPKINS. Thank you, Chairman Wolpe. On behalf of Governor Celeste, I want to commend you for conducting the hearing this morning on the Federal budgetary commitment to protecting and restoring the Great Lakes.

Historically, the Federal Government has allocated relatively few funds for Great Lakes Water Quality Program. And in the past few years, during the Reagan administration, the focus of the discussion has shifted from restoring the lakes and improving them, to reducing the role of Federal Government.

This raises a fundamental issue that I would like to address. That is, why should the Federal Government fund programs on the Great Lakes.

I believe there are a good many reasons why the Government ought to play a role in this, and make a far more significant financial contribution than it has to date.

The first reason for this, of course, is purely legal. The Federal Government, not the States, is a party to the international treaty that has been signed to clean up and restore the lakes. And, while some progress has been made toward achieving those goals, it is not because the Federal Government has made a scrupulous effort to carry out its part of the treaty obligations.

The record of compliance with the treaty is not one that the Government can be proud of. And the reason for that is largely the absence of adequate financial contribution.

The second reason is that with the exception of your own State of Michigan, most States in the basin have other water quality problems unrelated to the Great Lakes that they have to take responsibility for.

For example, only one third of the State of Ohio drains into the Great Lakes basin. And as much as the State is committed to the protection of Lake Erie, it cannot ignore its other water quality resources. A disproportionate amount of the State of Ohio's limited pollution control funds have gone toward Lake Erie. But, its protection is something that clearly curtails a larger responsibility than the State can fully accept. It is an international body of water and Federal funding policies must recognize that fact.

The Federal Government has had a historic role in managing regional water resources. One only has to look at the Colorado River, the Columbia and others, to see that the Federal Government has long invested huge sums of money, not always wisely, to develop regional water resources deemed to be of national economic interest.

Protection of the Great Lakes water quality has not benefited from this Federal role. In fact, taxpayers from our region of the country have subsidized the development of other regions.

In fiscal year 1982, for example, the Federal Government spent $9.75 per capita in the Great Lakes region on water resource development, and $36 per capita in the West.

The Great Lakes dollars have clearly caused the deserts to bloom. And, when Federal water policies make water cheaper in Albuquerque, NM than in Ashtabula, OH, something is wrong and needs to be corrected.

Protecting the lakes is essential to the regional economy, and ultimately to the national economy as well. The Great Lakes basin is home to one-fifth of U.S. manufacturing. Some of the most water-intensive industries in the country are centered there; 70 percent of North America's steel is made there, one-fourth of its chemicals, half of its automobile and machine parts.

It is no accident that these industries are located on the Great Lakes.

These industries will undergo, and are undergoing major technological changes. They must be revitalized. But, because of their need for tremendous quantities and reliable quantities of clean water, they will not leave the region.

We cannot rebuild our basic industries if we do not wisely manage the source of water upon which our manufacturing base depends. Our water resources are vital not only to providing jobs, but to preserving U.S. strength and competitive position in the world economy.

Of course, manufacturing and the significant water transportation industry are not the only reasons that the lakes are important to the economy. They are the center of a $10 billion recreation and tourism industry. Sports fishing in Lake Erie alone is a $733 million business.

And, as the quality of the lakes has improved, new homes and recreational facilities have sprung up along the coast.

In short, the Great Lakes are a major source of revenues. They must be protected like any capital asset, not only for the benefit of the region but for the country's economy.

Having argued for a greater Federal contribution, let me draw your attention to what Ohio sees as its most pressing needs. The first is not just a regional need for the Great Lakes, but a national need. It reduces the problem of toxic substances.

Funding for Federal and State programs involving toxic contamination need to be significantly increased. We must reverse the trend of recent years. More money needs to be spent testing chemicals for their effect on human health, monitoring toxics in the environment, and most importantly, preventing their introduction into the environment.

This is a Federal problem. Because toxic chemicals are so widespread, it makes no sense for both Ohio and Michigan to develop standards for the same toxic chemicals when there is no evidence that Ohioans are affected any differently than people in Michigan are.

In addition to setting national standards, we would encourage the Federal Government to invest in an energetic program to prevent the introduction of toxic chemicals into the environment.

Research and monitoring on the Great Lakes has gotten short shrift. How can we tell if billions of dollars we invest annually in pollution control are working, and if we are addressing the right problems?

The Federal Government has fared badly in this area of meeting its treaty obligations.

Another problem that is peculiar to the Great Lakes, perhaps, is that of combined sewer overflows. In 1981 Congress decided not to fund the correction of combined sewer overflows any more, but it did establish a special fund for the correction of combined sewer overflows in marine bays and estuaries.

We would recommend a similar approach for the Great Lakes. Clearly they are as important as any marine bay and estuary in the country.

An important problem for Lake Erie is agricultural non-point-source pollution. Like combined sewage overflows, this problem must be addressed if we are to meet our water quality goals.

Modest amounts of Federal funds have leveraged State money to introduce farmers in the Great Lakes basin to no-till farming techniques. This money is due to expire at the end of the calendar year, and should be maintained.

Finally, I would like to, on behalf of Governor Celeste, endorse the Great Lakes Management Initiative that Congressman Nowak described a little earlier this morning. This would not only provide a special focus on the Great Lakes, but it would also provide a much-needed source of consistent funding for the Great Lakes National Program Office, a Basinwide Toxic Monitoring Program, and the cleanup of contaminated harbors.

Thank you, Chairman Wolpe, for the opportunity to testify here today. On behalf of the Governor, we very much appreciate the focus that you and your committee and Congressman Nowak and others are bringing to the Great Lakes.

[Testimony resumes on p. 32.]

[The prepared statement of Mr. Hopkins follows.]

PREPARED STATEMENT OF ED HOPKINS

Chairman Wolpe, members of the Budget Committee's Task Force on Community and Natural Resources, I am Ed Hopkins, environmental policy assistant to Governor Richard F. Celeste of Ohio. On behalf of Governor Celeste, I want to commend you for conducting this hearing concerning the federal government's budgetary commitment to protecting and restoring the Great Lakes.

The health of the Midwest's economy and the national economy--as well as the health and quality of life of the Basin's 35 million citizens--depend in large part upon the protection and wise management of the largest single body of freshwater in the world. Unfortunately, the budgetary policies of the federal government have failed to recognize the vital role of this tremendous resource and its own international treaty obligations.

The states of our region are united as much by the interdependence of their economies as by the Great Lakes themselves. Despite the continuing effects of the economic recession, the Great Lakes region remains the nation's industrial heartland. One-fifth of U. S. manufacturing is located within the Basin. The region produces 70 percent of the steel manufactured in North America. It supplies more than one-fourth of its bulk chemicals and more than one-half its automobile and machine parts. It is a major producer of metal products, glass, plastics and rubber. It is no accident that these factories are located in the Great Lakes Basin; they are among the most water-intensive industries of the manufacturing sector.

Because of the region's abundant supplies of water, these industries will remain in the Great Lakes Basin, although they must change. The key to the economic revival of the Great Lakes States will be revitalizing our existing manufacturing sector through the use of new technology.

The modernization of this sector of our regional economy is vital not only to providing jobs for our citizens but to preserving the United States' strength and competitive position in the world economy. The emergence of high-technology industries, many of which will find homes in the Midwest, and the rise of a strong service sector are necessary for a strong economy, but they are not sufficient. America cannot have a premier world economy without a vibrant manufacturing sector. And it cannot rebuild its basic industries if it does not manage wisely the source of water upon which its manufacturing depends.

Manufacturing is but one part of a regional economy that is based on the Lakes. The transportation network the Lakes provide is a key reason why the Midwest developed as the industrial heartland, and the health of the transportation industry itself depends on the manufacturing base. Although the Great Lakes ports are an underutilized resource for international shipping, they generate an estimated $ billion annually for the regional economy.

The Lakes have become a major center of tourism and recreation, an industry that contributes approximately $10 billion to the region's economy. In Ohio alone, these are big businesses. More than 10 percent of Ohio's population purchases fishing licenses each year. In 1981 the Great Lakes Fishing Commission estimated that sports fishing in Ohio is a $73 million business, providing some 16 percent of Ohioans with a form of recreation. Income produced from pleasure boating along Lake Erie was $133 million in 1981. And, as the quality of the Lake has improved, houses and recreational facilities have sprung up along Ohio's coast, and parks have become revenue-producing magnets.

The size of the region's lake-dependent economy clearly has a significant impact on the nation.

The economic benefits the Great Lakes bring to the region are closely related to more intangible, quality-of-life values that business and the general public are becoming to appreciate more fully. In addition, of course, we cannot afford to forget that the Lakes serve as a source of drinking water for 26 million people. For this reason alone, the Great Lakes deserve a high degree of protection.

The federal government's budgetary policies have completely failed to reflect the overwhelming importance of the Lakes to our region, and to the entire nation. Because of their economic and ecological importance, the Great Lakes merit special consideration in the federal budget.

One reason for this priority is purely legal; the federal government is party to an international treaty that commits it to fulfill specific water quality management goals. Some progress has been made in restoring the Lakes but the United States has failed to meet the Treaty's goals, or even to achieve significant progress in some areas, primarily because it has allocated insufficient funds. The inadequate level of federal funding for Great Lakes research, monitoring and regulatory programs suggests that the federal government, particularly the Reagan Administation, is not serious about meeting its international obligations.

Beyond its purely legal responsibilities, the federal government could play a constructive and legitimate role in helping to manage a regional resource. In the development of the Colorado River, the protection of the Chesapeake Bay and the management of other regional water resources the federal government has provided leadership and significant funds. Yet in the Great Lakes the federal presence has been minimal.

Many Great Lakes states have significant water quality responsibilities in addition to the Lakes and cannot expend all of their limited funds protecting the Great Lakes drainage basin. Only one-third of the State of Ohio drains into Lake Erie, yet the State has allocated far more than one-third of its vailable construction grants and other pollution control funds to the northern portion of the State. The Great Lake States alone cannot assume full responsibility for the stewardship of this international resource.

The lack of federal involvement in managing and protecting a complex ecosystem of international significance raises serious questions of regional equity. Since 1824, less than 25 percent of Army Corps of Engineer funds have been spent in the Northeast and Midwest, home to 45 percent of the nation's population. In fiscal year 1982, federal water resource expenditures in the eight-state Great Lake region totalled only $9.75 per capita; meanwhile, the South and West received $36 per capita.

Great Lakes tax dollars have caused the deserts to bloom. When federal policies make water cheaper in Albuquerque, New Mexico, than in Ashtabula, Ohio, something is amiss.

Many of the water management challanges facing the Great Lakes are not unique to our region of the country, they are national problems. Since the early 1970's, Congress has enacted numerous environmental protection laws but has failed to appropriate the funds it authorized to carry out these laws. As a result, federal and state regulatory agencies have failed to achieve the standards and deadlines the Congress enacted. When the federal government reduced funding for sewage treatment construction grants, for example, compliance deadlines were simply postponed.

Inadequate federal funding of environmental protection programs is becoming more fully apparent just as we are beginning to realize the complexity of environmental problems. This is particularly true for those programs that involve toxic substances. Our society's ability to create new chemicals has overwhelmed the capabilities of underfunded regulatory agencies and research institutions to discover the long-term effects of these substances on aquatic life or humans.

In 1980, for example, the International Joint Commission found meaningful toxicity evaluations for only 89 of 381 chemical compounds examined, and even this data was too limited to allow exposure limits o be established.

This problem is not limited to the Great Lakes, however. Other examples of the national need for additional funding to begin to address toxic chemical pollution abound.

- Although hundreds of toxic chemicals have been detected in the nation's drinking water supplies, only a half-dozen standards exist for toxic substances; more than a decade after Congress passed the Safe Drinking Water Act, there are still no national limits on most toxic chemicals in drinking water. Meanwhile, funding was reduced for research on health effects of trace levels of toxic substances.
- U.S. EPA is supposed to screen new chemicals for safety before they go into production, and to review the more than 55,000 chemicals already in production. Yet the Agency's inadequate funding has allowed it to examine only a few dozen substances each year.
- Most pesticides on the market have never had adequate safety tests, but U. S. EPA's pesticide control program budget was cut 41 percent from 1981 to 1984.

These problems are national in scope, and the federal government must allocate sufficient funds for toxicity testing, evaluation and standard-setting. Because of the ubiquity of these substances, this is clearly a federal responsibility.

Instead of reacting t toxic chemical crses, the federal government should begin creative programs to prevent exposure to these substances. To avoid long-term health costs and costly environmental clean-ups, the federal government could undertake a crash effort to help industry reduce the volume of hazardous waste produced. Funding a research program to develop safer methods of pest control, in addition to increasing research and monitoring on existing pesticides, could avoid future contamination of groundwater and streams.

While the Geat Lakes suffer from the lack of attention to national environmental problems, the special research, monitoring and programmatic needs of the Lakes have also been underfunded.

Congress could take a major step toward recognizing the needs of the Great Lakes by enacting the Great Lakes anagement initiative as a part of the Clean Water Act reauthorization. This legislation for the fist time provides Congressional recognition of the Water Quality Agreement; it establishes the Great Lakes National Program Office as the lead agency responsible for implementing the Agreement and provides a consistent, though modest, level of funding; it establishes a formal partnership between federal and state agencies to develop a common management strategy for achieving the goals of the Agreement; it requires a Basi-wide monitoring network to focus on toxic contaminants, and; it earmarks funds to begin to remove contaminated sediments from Great Lakes harbors.

Enacting this proposed legislation is the single most important step that Congress could take to fulfill the federal commitment to restore water quality in the Great Lakes.

Without a stronger research and monitoring effort, it will be impossible to guage the effectiveness of pollution control measures, obtain the most clean-up for our limited dollars and insure that we are addressing the right problems. Priority research tasks should focus on measuring various pathways of contamination--atmospheric deposition, tributary sediment loadings and the contributions of contaminated groundwater to the Lakes; the efficacy of runoff controls; the relationship between Great Lakes water quality and lake levels, and; the impact of shoreline erosion and open-lake dumping of dredged materials on phosphorus loadings.

Whatever the federal government chooses as research and monitoring priorities, long-term, consistent funding is essential. Occasional snapshots of the Lakes do not provide analysts and decision makers with a valid data base, and yearly uncertainties about maintaining at a minimal level of funding the Great Lakes Environmental Research Lab and the Grosse Ile facility have disrupted on-going research programs.

In addition to the resarch and monitoring needs of the Great Lakes ecosystem, I would like to bring to your attention the funding requirements of several programs that can provide special benefits to the Lakes.

Progress is being made toward meeting wastewater treatment requirements in Great Lakes states. Continued level funding for all of the States of our region is jeopardized, however, by the changes in the construction grants allotment formula in the Senate version of the Clean Water Act reauthorization. This formula would provide additional subsidies to Sunbelt states at the expense of Great Lakes water quality. I strongly urge that the current allotment formula, contained in the House-passed bill, be extended.

Combined sewer overflows cause massive water quality problems in the Great Lakes, particularly in Lake Erie and Lake Ontario. As an economy measure, funding for the correction of conbined sewer overflows under the Clean Water Act has been eliminated. We cannot achieve the goals of the 1978 Water Quality Agreement if these problems are ignored. A special funding mechanism is needed--similar to the Clean Water Act's authorization for abating marine bay and estuary overflows from combined sewer systems--for Great Lakes communities. Because correcting these problems is tremendously expensive, Congress might provide funding to demonstrate innovative, less costly technologies and management strategies. Additional research on new correction technologies is also needed.

Another major priority for Lake Erie is continued federal funding for agricultural non-point pollution control programs. Agricultural runoff accounts for 65 to 75 percent of the total phosphorus load to Lake Erie; the goals of the Agreement will not be achieved without addressing this problem. The Lake Erie phosphorus strategy has combined a modest level of federal funding with state funds to support conservation tillage and no till programs. It also provides technical assistance and education for farmers. Federal assistance, scheduled to expire in December 1985, should be extended to permit continued progress in reducing phosphorus loadings from agricultural sources.

Ohio's Strategic Plan for the protection of its natural resources identifies continued funding for the Costal Zone Management program as a top priority. The International Joint Commission concluded that better coastal management practices are the best solution to help reduce flooding and erosion damage. With the Lakes at an historic high level--and millions of dollars in damage expected from flooding in Lake Erie alone this year--Congress should extend funding for this program.

In conclusion, Mr. Chairman, the State of Ohio has recognized through its strategic planning process that the protection of the Great Lakes is essential to the revitalization of the economy and to the public's health.

While Lake Erie will continue to receive a disproportionate share of our limited pollution control funding, a far more significant federal budgetary commitment to the Lakes and to environmental protection programs generally is essential if we are to solve complex water quality problems.

On behalf of Governor Celeste, thank you for providing the State of Ohio with the opportunity to present its views.

Mr. WOLPE. Thank you very much, Mr. Hopkins. I know the State of Ohio has become particularly concerned in recent years with the problem of soil erosion. I, personally, have welcomed Governor Celeste's support of the sodbuster provisions in the 1985 farm bill that is now on the House floor. In fact, later today, we will be trying to strengthen that provision even further. But the Governor's support in the effort has been very important.

Both you and Mr. Martin from the State of Michigan, referred to the failure of the United States, because of what has happened with respect to Federal budgets, to really fulfill treaty obligations.

Could you comment on the Canadian performance in that regard?

Mr. HOPKINS. I'd be happy to try to supply some material for the record, Mr. Chairman. I am not prepared to comment right now on the Canadian performance. I'm sorry.

Mr. WOLPE. That would be appreciated.

Also, one of the themes that runs through your testimony and that of other witnesses, relates to the importance of partnerships between the State governments and the Federal Government. How would you differentiate analytically between what the States can undertake and what ought to be that of the Federal role?

Mr. HOPKINS. Well, of course, in the early 1970's, Congress enacted a number of environmental protection statutes, which explicitly set forth national standards and national goals for the cleanup of water and air and land pollution. And we believe it is absolutely essential to have national standards to prevent the possibility of industries shopping from one State to the other for more suitable locations based on environmental reasons. So, we believe those standards absolutely have to be set at the national level.

There has been a failure to do that in the air program, in the drinking water program. The Federal ground water program has left these matters up to the States, and there is going to be a duplication of effort and wasted resources in the States, if the States are called upon to continue to set standards for substances in the environment that really do have a national presence. So, we feel that is a national role.

Now, there certainly are environmental problems that are peculiar to individual States, that are not problems that are national in scope. And the State of Ohio, for example, is beginning to carry out some of those programs on its own.

You mentioned soil erosion as being one of the big problems in Lake Erie. The State has, in the past few years, increased its contribution for funding demonstration projects on no-till farming, and is with farmers' programs to reduce soil erosion and other sources of agricultural contamination.

So, I think that there are some areas where the States are moving ahead with greater funding on their own. But some of the larger problems in the Basin are national in character, and need to be funded more generously on the Federal level.

Mr. WOLPE. Can you describe efforts within your own States to mobilize business and industry on behalf of more sound Great Lakes policy?

Mr. HOPKINS. One area where we are making some progress with industry is in the ground water area, which may be a major contributor to the contamination of the tributaries of Lake Erie. And we are working jointly with industry to develop a more comprehensive ground water protection program for the State of Ohio.

I don't think I could name another area where we have been as successful working with industry to address an environmental problem.

Mr. WOLPE. What is the overall commitment of the State of Ohio to what might be described as Great Lakes-related issues?

Mr. HOPKINS. I don't have a funding number right at hand that we are putting into the Great Lakes. But early last year, Governor Celeste developed a strategic plan for the protection of the natural resources in the State of Ohio. And the Lake Erie basin certainly occupied a good portion of that strategic plan with a fairly comprehensive strategy to increase State funding and strengthen State regulatory programs to protect Lake Erie and its tributaries from a number of sources of pollution; both ground water, surface water, soil erosion, and toxic waste problems.

So, there is a strategy in place and funding has been increasing for that. And I would be happy to provide the committee with more details on the strategy that has been developed.

Mr. WOLPE. I would appreciate that.

[The following material was supplied for the record:]

INITIATIVE TWO [1]

TO IMPLEMENT A BALANCED LAKE ERIE AND OHIO RIVER RESOURCE MANAGEMENT AND PROTECTION PROGRAM

Lake Erie and the Ohio River are two of Ohio's richest resources. Bounding Ohio on the north and the south, they have had an immense impact on our economic development. Despite their significance, however, neither has received the kind of management and protection they need to preserve their vitality and long-term economic and aesthetic value.

Lake Erie Resource Management and Protection Program.—The health of Lake Erie and the shoreline region is being threatened by competing uses and shore erosion—placing vast recreational and economic opportunities in jeopardy. Working with local communities and the private sector, the State is determined to protect the Lake and to preserve its potential for improving the quality of life for all Ohioans.

Specifically, the State of Ohio will join with other states in urging the federal government to fully fund its Coastal Zone Management Program. In addition, it will—

develop a shoreline management program to assist in carrying out local shoreline programs;

provide additional public access to Lake Erie;

protect shoreline wetlands; and

work with local communities to identify essential concerns that can be addressed through state, local and private sector cooperation.

Ohio River Resource Program.—Like Lake Erie, the Ohio River is a highly vulnerable resource. Until recently, however, Ohio had no legal jurisdiction over the river and could do little to manage it. With the U.S. Supreme Court's decision in *Ohio v. Kentucky* (1980), the State received jurisdiction over a portion of the river.

Today, the Ohio River is one of the nation's major trade corridors. Yet, increased shipping and longer barge tows have produced navigation problems. They have threatened long-range plans for shipping development and produced conflicts between competing recreational and commercial users.

Of particular concern for many years has been the quality of the river's water, which continues to be compromised by discharges of sewage, industrial wastes and thermal effluents from electrical generating plants located along the river. In addition, private riverfront development is reducing the river's recreational use by precluding public access. And riverbank erosion is an increasingly serious problem, rapidly eating away at residential and commercial riverfront property.

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[1] Source: Ohio's Strategic Plan for the Natural and Physical Environment, pp. 24–25.

The State of Ohio is determined to resolve these problems through the establishment of an Ohio River Resource Program. Specifically, it will—

work with local communities to determine what kinds of additional recreational facilities are needed along the river and how they can be acquired;

develop a comprehensive fish management plan to better manage aquatic life in the river and its tributaries;

urge Congress to appropriate needed funds to renovate the Gallipolis Lock and Dam; and

work closely with other Ohio River Basin states to develop a basin wide approach to shared problems, including water quality, flooding and navigation. During the next year, the State will convene a multi-state Governors' Conference for this purpose.

Initiative Three

TO MANAGE EFFECTIVELY OHIO'S EXCESS WATER

Run-off from farmlands causes erosion and sedimentation that can clog streams—impairing agricultural drainage, destroying fish and wildlife habitat, and causing flooding. Changes in our living patterns, especially since the 1940s, also have contributed significantly to increased flood losses. Large scale population shifts from cities to suburbs drastically affected stream and drainage flows, as has the construction of buildings, parking lots, paved streets and inadequate storm sewers.

Today, the State's role in resolving these problems is limited to offering technical assistance to communities seeking federal flood insurance protection. There are no state laws prohibiting unwise development in flood plains, nor are there state programs for stormwater and stream channel management.

In order to reduce costs associated with excess water and to assist local communities in their excess water management efforts, the State of Ohio will—

adopt state standards for the use of flood hazard areas and for new construction within such areas;

require state agencies, through their own operations, to encourage wise and judicious use of floodplains;

seek legislation to establish sanctioned mechanisms for resolving storm water management problems that affect more than one community;

develop statewide standards for maintaining streams, emergency flow areas and other storm water management systems; and

provide technical assistance to local communities and private developers on stream channel management.

Mr. **Wolpe**. Let me thank you very much for your very comprehensive testimony. The entire written testimony, of course, will be inserted into the record of the hearing.

I thank you very much.

Mr. **Hopkins**. Thank you, Mr. Chairman.

Mr. **Wolpe**. I would like to now invite the representatives of the citizens' groups to come to the witness table.

I am very pleased to welcome Ms. Jane Elder, Midwest representative for the Sierra Club; Wayne Schmidt, staff ecologist of Michigan United Conservation Clubs; and David Miller, the executive director of Great Lakes United.

The full text of your testimony will be inserted into the record. I would ask that you each summarize your verbal testimony within the 5-minute timeframe.

STATEMENT OF JANE E. ELDER, MIDWEST REPRESENTATIVE ON BEHALF OF THE SIERRA CLUB

Ms. **Elder**. I really appreciate this opportunity to speak on behalf of protection of the Great Lakes.

It goes without saying that it takes money to enforce environmental protection, and protection of the Great Lakes is no exception.

We know these are tight times for the Federal budget, but they are also tough times for the Great Lakes. We are worried about what is happening to the lakes, we are worried about fish we are afraid to eat because of toxic contamination, we are shocked by sights of deformed waterfowl and cancer-laden fish. We are troubled that a wild lake trout may be a thing of the past.

We need research to tell us what is happening, and what can be done. We need enforcement to keep the waters of the lakes clean. It takes money to do the job and all we are asking for is money to do the job right.

Over the last 10 years, we have watched budgets for programs like Great Lakes Federal research eliminated by the administration, and major portions of the operating budget of the Great Lakes National Program Office reprogrammed for other EPA priorities. Evidence that in a tight budget process, when push comes to shove, the Great Lakes get shoved.

We appreciate the efforts of Congress to restore these budgets year after year, but urge you to realize that an uncertain budget at static levels cannot provide latitude for creative new research into new areas.

We hope that the new language in the Clean Water Act which establishes the Great Lakes Office and recognizes the Water Quality Agreement with Canada, will discourage interdepartmental raiding of EPA Great Lakes funds, and provide new incentives for administration support of programs that we have pledged to honor with Canada.

The Water Quality Agreement specifies three critical area which require U.S. budget commitments. The first is cleanup programs.

This includes compliance with State and Federal laws, and in some cases specifically designed cleanup programs such as the successful Nutrient Reduction Program for Lake Erie. The toxic hotspot map which we brought along with us to Washington this week, identifies 81 municipalities and 53 industries which are not in compliance with their permits.

So, while the States must do their part, ultimately the EPA must be responsible for enforcing and administering the Federal law.

In addition to compliance irregularities, we are faced with the need for long-term cleanup strategies and programs in at least 18 seriously contaminated sites in the basin.

We applaud the proposal by Senator Proxmire and Members of the House as well, to initiate studies in five of these sites at a level of $2 million for the next budget cycle.

The second area needing funding is monitoring. Monitoring tells us whether or not cleanup strategies are working. Last spring I coauthored an article about Great Lakes fish contamination. And one of the things I learned is how little testing of potentially contaminated fish is taking place, and how expensive it is. One test for one fish for dioxin may cost $3,000 or more.

Most exotic chemicals are not routinely tested for, because precious research and monitoring dollars are saved for chemicals that are suspected of being present and potentially dangerous for human consumption. Who knows what is falling through the cracks?

Finally, there is the research component. Research identifies new problems as well as helps find solutions for existing ones.

It is worth reiterating why these programs are a good investment of Federal dollars. Great Lakes research is significant, not only for what we learn about the Great Lakes, but for its contributions to globally significant scientific findings. The link between DDT and declining bird populations was first established through research in the Great Lakes. Likewise, PCB's were first discovered as a widespread bioaccumulative contaminant in Great Lakes. Chesapeake Bay is now benefiting from nutrient control programs first tested in the Great Lakes. The unique properties of the Great Lakes system make it an ideal, if unwilling laboratory where findings can often be applied to other systems, if not the environment at large.

Toxic substances in the Great Lakes pose complex and frightening problems. The more we know about what is out there, the more difficult the job of identifying these substances, their sources, and their effects appear. We need research to find out how and why these things are happening, and what the implications are for human health. That research will cost dollars now, but may save human lives later. Concurrently, we need stringent enforcement of existing laws to keep known sources of toxic substances from adding to the problem. And we need monitoring so we can track how we are doing. Thank you.

[The prepared statement of Ms. Elder follows:]

PREPARED STATEMENT OF JANE E. ELDER

Thank you for this opportunity to speak on behalf of protection of the Great Lakes.

It takes money to enforce environmental protection, and protecting the Great Lakes is no exception. We know these are tight times for the federal budget, but they are also tough times for the Great Lakes.

We are worried about what is happening to the Great Lakes. We are worried about fish we are afraid to eat because of toxic contamination. We are shocked by deformed waterfowl and cancer-laden fish. We are troubled that a wild Lake Trout may be a thing of the past. We need research to tell us what is happening and what can be done. We need enforcement to keep the waters of the lakes clean. It takes money to do the job. All we are asking is for enough money to do the job right.

Over the last ten years we have watched budgets for programs like Great Lakes Federal research eliminated by the administration and major portions of the operating budget of the Great Lakes National Program Office reprogrammed for other EPA priorities,—evidence that in the budget process that when push comes to shove, the Great Lakes get shoved. We appreciate the efforts of Congress to restore these budgets year after year, but urge you to realize that an uncertain budget at static levels cannot provide the latitude for creative new research into new areas.

We hope that the new language in the Clean Water Act which establishes the Great Lakes Office and recognizes the Water Quality Agreement with Canada will discourage interdepartmental raiding of EPA Great Lakes funds and provide new incentives for administration support of programs we have pledged to honor with Canada.

The Water Quality Agreement specifies three critical areas which require U.S. budget commitments. The first is cleanup programs. This includes compliance with state and federal laws and in some cases specifically designed cleanup programs, such as the successful nutrient reduction program for Lake Erie. The toxic "hot-spot" map that we brought with us to Washington this week identifies 81 municipalities and 53 industries which are not in compliance with their permits. While the states must do their part, ultimately the EPA must be responsible for enforcing and administering the federal law. In addition to compliance irregularities, we are faced with the need for long-term cleanup strategies and programs for at least eighteen seriously contaminated sites in the basin. We applaud the proposal by Senator Proxmire to initiate studies in five of these sites at a level of $2 million dollars.

The second area needing money is monitoring. Monitoring tells us whether or not our cleanup strategies are working. Last spring I co-authored an article about Great Lakes fish contamination. One of the things I learned in writing that article is how little testing of potentially contaminated fish is taking place, and how expensive testing for toxics is. One test for one fish for dioxin may cost $3,000 or more. Most exotic chemcials are not routinely tested for because precious research and monitoring dollars are saved for chemicals that are suspected of being present and potentially dangerous for human consumption. Who knows what is falling through the cracks?

Finally, there is the research component. Research identifies new problems as well as helps find solutions to existing problems. Perhaps it is worth reiterating why these programs are a good investment of federal dollars. Great Lakes research is significant not only for what we learn about the Great Lakes, but for its contributions to globally significant scientific findings. The link between DDT and declining bird populations was established through research in the Great Lakes. Likewise, PCBs were first discovered as a widespread bioaccumulative contaminant in the Great Lakes. Chesapeake Bay in now benefiting from nutrient control programs first tested in the Great Lakes. The unique properties of the Great Lakes system make it an ideal, if unwilling laboratory where findings can often be applied to other systems if not the environment at large.

Toxic substances in the Great Lakes pose complex and frightening problems. The more we know about what's out there, the more difficult the job of identifying these substances, their sources, and their affects appears. We need research to find out how and why these things are happening, and what the implications are for human health. That research will cost dollars now, but may save human lives later. Concurrently, we need stringent enforcement of existing laws to keep known sources of toxic substances from adding to the problem, and we need monitoring so we can keep track of how we are doing.

Thank you very much.

STATEMENT OF WAYNE SCHMIDT, STAFF ECOLOGIST, ON BEHALF OF THE MICHIGAN UNITED CONSERVATIVE CLUBS

Mr. **Schmidt**. Congressman Wolpe, thank you very much for your efforts here today on behalf of the Great Lakes and the interests of the State of Michigan. As you know, our folks back home have no greater conservation interest than the protection and long-term management of the Great Lakes.

First, and foremost, we seek Federal recognition through an explicit congressional statement that the Great Lakes are a unique national treasure. Absent such recognition, we can expect continuing budgetary problems relating to the Great Lakes.

For example, funding for federally sponsored Great Lakes research will remain an annual brawl; Federal commitment to objectives of the Great Lakes Water Quality Agreement of 1978 with Canada, will remain meager; Federal accountability to recommendations of the International Joint Commission and its boards will remain barely visible; the U.S. Department of Energy will continue to ignore the presence of the Great Lakes in studying the proposed siting of a high-level radioactive waste repository; the U.S. EPA will continue to assume a passive role in oversight of State water pollution control programs and upgrading of State water quality standards; long-term impacts on fish and wildlife will continue to be ignored in decisions on Superfund and other polluted site cleanups; Federal agencies and the Justice Department will continue to assert that dilution of contaminated ground water by discharge to the Great Lakes and their tributary rivers is acceptable; cleanup of toxic hotspots in the Great Lakes will continue to stall from lack of commitment and funds.

You have heard a number of superlatives today about the wonderful Great Lakes, and certainly they are just that, the greatest bodies of fresh water in the world. And I am not going to repeat some of that today.

And as you have also heard today, these remarkable bodies of water have some serious problems. Our billion dollar sport fishing industry; the multimillion dollar commercial fishing industry are threatened by pollution contaminants in the fishery. Some even fear that the Great Lakes as a source of drinking water may be imperiled. And there is growing concern that the forage base supporting our Great Lakes fishery may be on the verge of collapse.

We don't know what is causing many of these problems, and we certainly don't know how to fix all of them. Solutions will depend on expanded and sustained Federal funding for research monitoring and data gathering.

Now, certainly we are asking for more funding. And in our prepared statement we suggest several ways where that money could come from and several programs on the Great Lakes that we believe are not justified for funding.

And we also mentioned that we do support funding those basic Federal programs, such as the Clean Air Act, Clean Water Act, and the Superfund Program, that are absolutely critical to the future of the Great Lakes.

Today MUCC wishes to emphasize four key areas needing special attention and funding:

One, atmospheric pollutants, their sources and effects on the Great Lakes.

Two, ground water pollution and its effects on the Great Lakes.

Three, human health assessments associated with ingestion of contaminated fish and drinking water.

Four, ecological effects of contaminants. This point includes the need for better understanding of fish tumors, wildlife contamination, and especially the interactive effects of toxicants on fish, wildlife, and ourselves.

True resolution of profound and complex problems affecting the Great Lakes ecosystem must be preceded by a change in attitude and priorities by the Congress and the administration toward the Great Lakes. Only in the last few decades have the people of our region begun to respect the fragility of these lakes and understand our economic stake in their future. This was referred to by Congressman Henry earlier as this "profound awakening in our region."

Even more recently, have we begun to understand the depth of our ignorance of this complex ecosystem. So, it is not surprising that the Nation and this Congress have fallen short in treatment of the Great Lakes.

We are changing, and we ask the Congress to change with us.

In closing, we would refer you to the first and second biennial reports from the International Joint Commission under the Great Lakes Water Quality Agreement. It is all there, if only this Congress will listen. The IJC's recommendations have not been addressed by the U.S. Government, and we believe they should form the blueprint for any Federal budgetary agenda for the Great Lakes.

Thank you very much.

[The prepared statement of Mr. Schmidt follows:]

PREPARED STATEMENT OF WAYNE SCHMIDT

On behalf of the Michigan United Conservation Clubs (MUCC), thank you for this hearing and the opportunity to participate. For 48 years MUCC has worked on behalf of Michigan's citizens who care deeply about the future of our natural resources, particularly the Great Lakes.

Let me preface these remarks by indicating for the record that we—like others—are concerned about the problems created by a growing federal deficit. Just as it is critical that we not jeopardize our children's and our grandchildren's future by the wanton destruction of environmentally sensitive areas or by unregulated pollution, so it is critical that we not burden future generations with huge bills which they will find difficult to pay.

As you would expect, we will urge greater spending on some Great Lakes programs. But at the same time, we also urge greater accountability for how those tax dollars are spent, increased cost recovery and user fees for federal water projects nationwide, and greater efficiencies in coordination of federal agency programs affecting natural resource research and management. We will suggest that some federal expenditures on the Great Lakes are not justified.

First and foremost, we seek federal recognition through an explicit Congressional statement that the Great Lakes are a unique national treasure. Absent such recognition, we can expect continuing budgetary problems relating to the Great Lakes. For example:

Funding for federally sponsored Great Lakes research will remain an annual brawl.

Federal commitment to objectives of the Great Lakes Water Quality Agreement of 1978 with Canada remain meager, as documented by two 1982 General Accounting Office studies to the Congress and to the Secretary of State.

Federal accountability to recommendations of the International Joint Commission (IJC) and its boards will remain barely visible.

The U.S. Dept. of Energy will continue to ignore the presence of the Great Lakes in studying siting of a high-level radioactive waste repository.

The U.S. Environmental Protection Agency will continue to assume a passive role in oversight of State water pollution control programs and in upgrading of state water quality standards.

Long term impacts on fish and wildlife will continue to be ignored in decisions on Superfund and other polluted site cleanups.

Federal agencies and the Justice Department will continue to assert that dilution of contaminated ground water by discharge to the Great Lakes and their tributary rivers is acceptable.

Cleanup of toxic hot spots in the Great Lakes will continue to stall from lack of commitment and funds.

How great are these lakes? Well, they are each so big you can't see across them. They are so deep, no one had seen the bottom until last summer. You can swim in them and drink from them and not get sick. They offer some of the best salmon, trout and muskellunge fishing in the world.

But these remarkable lakes are in trouble. Their waters and fish are laced with hundreds of exotic chemicals. Children and women who ever expect to bear children are advised to eat none of those fish. Lake trout won't reproduce in some of the lakes. Some fish-eating wildlife exhibit gross deformities. Hideous cancers are commonly found on fish in some heavily polluted waters of the Great Lakes.

A billion dollar sport fishing industry and a multi-million dollar commercial fishing industry are threatened by pollution. Some fear that use of the Great Lakes as a drinking water source may even be imperiled. And there is growing concern that the forage base supporting the Great Lakes fishery may be on the verge of collapse.

We don't know what is causing many of these problems. We don't know how to fix all of them. Solutions will depend on expanded and sustained federal funding for research, monitoring and data gathering.

Here are some ways we believe Congress could save money for use in finding the solutions. We do not support expansion of the Coastal Barrier Resources Act (and the associated federal expenditures for the program) to include the Great Lakes, as now being proposed by the Dept. of Interior.

We do not support Congressional approval and spending of $227 million on an all-new lock at Sault Ste. Marie, as proposed in H.R. 6. This lock may be our boondoggle water project, but it is still a boondoggle. And every state has them. We are tired of seeing our tax dollars subsidizing special interest water projects all over the nation.

We do support funding those basic federal environmental programs key to protection of the nation's environment and public health, which includes the Great Lakes area—the Clean Air Act, with vastly expanded toxic air pollutant control program; the Clean Water Act; Superfund; and others.

We wish to emphasize four key areas needing special attention and funding. All were described in detail in the 1985 report of the IJC's Great Lakes Water Quality Board:

(1) Atmospheric pollutants, their sources and effects on the Great Lakes.

(2) Ground water pollution and its effects on the Great Lakes.

(3) Human health assessments associated with ingestion of contaminated fish and drinking water.

(4) Ecological effects of contaminants. This point includes the need for better understanding of fish tumors, wildlife contamination, and especially the interactive effects of toxicants on fish, wildlife and people.

True resolution of profound and complex problems affecting the Great Lakes ecosystem must be preceded by a change in attitude and priorities by the Congress and the Administration toward the Great Lakes.

Only in the last few decade have the people of our region begun to respect the fragility of these lakes and understand our economic stake in their future. Even more recently have we begun to understand the depth of our ignorance of this complex ecosystem. So it is not surprising that the nation and this Congress have fallen short in treatment of the Great Lakes. We are changing; we ask the Congress to change with us.

In closing, we would refer you to the first and second biennial reports (1982 and 1984) from the IJC under the Great Lakes Water Quality Agreement of 1978. It is all there, if only you will listen. The IJC's recommendations have not been addressed by the U.S. Government. They should form the blueprint for any federal budgetary agenda for the Great Lakes.

On behalf of MUCC's 100,000 members and 380 affiliated organizations, thank you. Any questions would be welcomed.

STATEMENT OF DAVID MILLER, EXECUTIVE DIRECTOR, GREAT LAKES UNITED

Mr. MILLER. Mr. Wolpe, on behalf of Great Lakes United, I would like to thank you for holding this important hearing today.

I would like to submit for the record a support statement from The United Auto Workers and a booklet entitled "The Great Lakes Congressional Agenda" developed by member organizations of Great Lakes United.

Great Lakes United, an international organization of environmental, sportsmen, union, governmental and small business interests throughout the eight Great Lakes States and two Canadian provinces, is dedicated to the protection, conservation and proper management of the Great Lakes-St. Lawrence River System.

Great Lakes United is concerned with the present lack of Federal commitment to revitalization of this treasured resource, the Great Lakes ecosystem. As research, enforcement, and natural resource management needs are increased to meet the complex water quality and quantity problems of the 1980's, the Federal Government has cut or kept constant funding levels for many critical environmental programs.

According to the figures developed by the Great Lakes Commission, the administration's proposed fiscal year 1986 budget for the Environmental Protection Agency, would provide the same purchasing power for operations as the Agency had in 1973.

Since 1973, when the EPA was required to mainly control conventional pollutants, new statutory responsibility, including seven environmental laws to control toxics have greatly increased the Environmental Protection Agency's workload and resource needs. The Federal Government must move forward in reinstating the necessary resources for the Agency to carry out its congressional mandate.

In 1982 the General Accouinting Office (GAO) reported noncompliance with basic environmental standards by 82 percent of major sources of water pollution and 78 percent of the highest priority active hazardous waste facilities in the Great Lakes region.

While Congress has approved increases over the proposed administration's budget for the EPA in fiscal year 1986, most of these gains will be in the implementation of the 1984 amendments to the Resource Conservation Recovery Act. Regulatory enforcement and research programs in other areas would face further reductions beyond their current shortfalls.

In February of 1985, the Northeast-Midwest Congressional Coalition reported, "Programs for water quality and the control of toxic substances other than hazardous wastes, on the other hand, would be reduced overall" from fiscal year 1985.

Great Lakes United urges this task force to work toward the reinstatement of the Environmental Protection Agency so they can implement the laws called upon by the citizens of the United States.

Great Lakes research programs have had a decrease in buying power from fiscal year 1980. Back in August of 1982, the International Joint Commission termed past budget cuts in research "shortsighted and potentially dangerous." This reduction in real dollars over the past 5 years is in spite of the new and ongoing research initiatives necessary to carry out the goals and objectives of the 1978 United States-Canadian Great Lakes Water Quality Agreement.

While the reinstatement of funding by the 99th Congress from the proposed administrative budget is encouraging, the fact remains that constant funding programs without consideration for new research responsibilities and inflationary factors will cripple our existing facilities.

Presently, there are a number of Federal environmental laws under consideration for reauthorization. At a minimum, these programs must be reinstated with the following appropriations, if the Great Lakes are going to be protected and properly managed:

One, Federal Superfund program of $10.1 billion a year.

Two, strong reauthorization of the Clean Water Act, with appropriations for Great Lakes research coordination and the House recommended level for the construction grant programs mentioned earlier today.

Three, the reauthorization of the Coastal Zone Management Program with increases as spelled out in H.R. 2121.

Four, the reauthorization of the Clean Air Act with appropriations for toxic air pollution research and acid rain control programs.

Members of Congress must stand behind these programs while continuing to work toward the revitalization of the Environmental Protection Agency.

In addition, this task force should monitor Federal programs to ensure that funds are properly allocated. For example, the Great

Lakes States have approximately 38 percent of Superfund sites on the National Priority List. However, according to the Federal Funds Information for State, July 31, 1985, the Great Lakes States have only received 26 percent of the national Superfund moneys obligated by the EPA for sites from 1982 to 1984.

With the possibility that Congress will not reauthorize the Superfund Program, Administrator Lee Thomas recently announced action to slow or halt remedial cleanup and design costs for 24 of the existing projects in the Great Lakes States.

The Great Lakes-St. Lawrence ecosystem will surely perish unless the Federal Government embarks upon a strong budgetary and legislative commitment to this vital resource.

A Federal commitment will not only be an investment for the environment and public health of the Great Lakes basin, but also act as a boost to the economy of the region. Tourism and fishing benefits will never reach their full economic potential unless the Federal Government moves expeditiously to improve water quality, to remediate toxic hotspots, and to initiate overall proper management of the resource.

We can make the investment today, or pay the costs tomorrow. Great Lakes United urges this task force to invest in the largest supply of fresh water in the Western Hemisphere, the Great Lakes-St. Lawrence River System.

Thank you.

[Testimony resumes on p. 56.]

[The prepared statement of Mr. Miller, with attachments, follows:]

PREPARED STATEMENT OF DAVID MILLER

Mr. Chairman and members of the Committee, my name is David Miller, Executive Director of Great Lakes United, located in Buffalo, New York.

I would like to submit for the record, a support statement from the UAW and a booklet entitled the Great Lakes Congressional Agenda developed by member organizations of Great Lakes United.

Great Lakes United, an international organization of environmental, sportsman, union, governmental and small business interests throughout the eight Great Lakes states and two Canadian provinces, is dedicated to the protection, conservation and proper management of the Great Lakes-St. Lawrence River System. Great Lakes United is concerned with the present lack of federal commitment to the revitalization of this treasured resource—the Great Lakes Ecosystem. As research, enforcement and natural resource management needs are increased to meet the complex water quality and quantity problems of the 80's, the federal government has cut or kept constant funding levels for many critical environmental programs.

According to figures developed by the Great Lakes Commission, the administration's proposed fiscal year 1986 budget for the E.P.A. would provide the same purchasing power for operations as the Agency had in 1973. Since 1973, when the E.P.A. was required to mainly control conventional pollutants, new statutory responsibilities including seven environmental laws to control toxics have greatly increased the E.P.A.'s workload and resource needs. The federal government must move forward in reinstating the necessary resources for the Agency to carry out its Congressional mandates. In 1982 the General Accounting Office (GAO) reported non-compliance with basic environmental standards by 82 percent of major sources of water pollution and 78 percent of the highest priority active hazardous waste facilities in the Great Lakes region.

While Congress has approved increases over the proposed administration's budget for the E.P.A. in fiscal year 1986, most of these gains will be in the implementation of the 1984 amendments to the Resource Conservation and Recovery Act. Regulatory, enforcement and research programs in other areas would face further reductions beyond their current shortfalls. In February of 1985, the Northeast-Midwest Congressional Coalition reported that "Programs for water quality and the control of toxic substances other than hazardous wastes, on the other hand, would be reduced overall" from fiscal year 1985. Great Lakes United urges this task force to work toward the reinstatement of the Environmental Protection Agency so they can implement the laws called upon by the citizens of the United States.

Great Lakes research programs have had a decrease in buying power from fiscal year 1980. Back in August of 1982, the International Joint Commission termed passed budget cuts in research "short-sighted and potentially dangerous." This reduction in real dollars over the past five years is in spite of the new and on-going research initiatives necessary to carry out the goals and objectives of the 1978 U.S.-Canadian Great Lakes Water Quality Agreement. While the reinstatement of funding by the 99th Congress from the proposed administrative budget is encouraging, the fact remains that constant funding programs without consideration for new research responsibilities and inflationary factors will cripple our existing facilities.

Presently there are a number of federal environmental laws under consideration for reauthorization. At a minimum, these programs must be reinstated with the following appropriations if the Great Lakes are going to be protected and properly managed.

1. Federal Superfund program of $10.1 billion a year.
2. Strong reauthorization of the Clean Water Act with appropriations for Great Lakes research coordination and the House recommended level for the construction grant programs.
3. The reauthorization of the Coastal Zone Management Program with annual increases as spelled out in H.R. 2121.
4. The reauthorization of the Clean Air Act with appropriations for toxic air pollution research and acid rain control programs.

Members of Congress must stand behind these programs while continuing to work toward the revitalization of the Environmental Protection Agency. In addition, this task force should monitor federal environmental programs to ensure that the funds are properly allocated. For example, the Great Lakes states have approximately 38 percent of the superfund sites on the National Priority List. However, according to the Federal Funds Information for State (July 31, 1985), the Great Lakes states have only received 26 percent of the national superfund monies obligated by the E.P.A. for sites from 1982-1984. With the possibility that Congress will not reauthorize the Superfund program, Administrator Lee Thomas recently announced action to slow or halt remedial clean-up and design costs for twenty-four of the existing projects in the Great Lakes states.

The Great Lakes-St. Lawrence Ecosystem will surely perish unless the federal government embarks upon a strong budgetary and legislative commitment to this vital resource. A federal commitment will not only be an investment for the environment and public health of the Great Lakes Basin but also act as a boost to the economy of the region. Tourism and fishing benefits will never reach their full economic potentials unless the federal government moves expeditiously to improve water quality, to remediate toxic hot-spots and to initiate overall proper management of the resource.

We can make the investment today, or pay the costs tomorrow. Great Lakes United urges this task force to invest in the largest supply of fresh water in the Western Hemisphere, the Great Lakes-St. Lawrence River System.

Thank you.

INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE &
AGRICULTURAL IMPLEMENT WORKERS OF AMERICA—UAW,
Washington, DC, October 2, 1985.

Hon. HOWARD WOLPE,
Chairman, House Budget Committee's Task Force on Community and Natural Resources, U.S. House of Representatives, Washington, DC.

DEAR CHAIRMAN WOLPE: The United Auto Workers is an active participant and member of Great Lakes United. We join with them in support of Mr. Miller's statement.

Sincerely,

DICK WARDEN,
Director, Legislative Affairs.

THE GREAT LAKES CONGRESSIONAL AGENDA

(Great Lakes United—Fall 1985)

FEDERAL BUDGETARY NEEDS FOR THE GREAT LAKES BASIN

The Great Lakes-St. Lawrence River Basin is indeed one of the world's most treasured and fragile resources. It serves as a home for 45 million American and Canadian citizens. It provides drinking water for 24 million people. It's shorlines stretch over 9,400 miles. The sports fishery has a regional economic benefit of $1.16 billion annually. The waters provide a national economic, recreational and environmental benefit for the United States.

Therefore, Great Lakes United believes it is time for the U.S. Congress to acknowledge the national importance of the Great Lakes Basin and adequately fund federal programs to insure its protection, conservation and proper management.

RESEARCH PROGRAMS

The United States is obligated to maintain a viable Great Lakes research program under provisions of the United States-Canada Great Lakes Water Quality Agreement of 1978. The International Joint Commission has termed the past budget cuts in research as "short-sighted and potentially dangerous" in its First Biennial Report to the governments on Great Lakes Water Quality (August, 1982). The current Administration has continued to propose cuts in and elimination of essential Great Lakes Research Institutions. The Great Lakes Congressional Delegations must continue to work towards not only the restoration of current funding levels, but also additional resources for inflationary factors and increased federal responsibilities under the Water Quality Agreement. Level funding causes loss of research positions and an inability to take on new critical iniatives. The key research institutions are listed below. The funding figures are in the millions of dollars. The figures in parenthesis are 1980 real dollars discounted through the cost of living index.

---U.S.E.P.A. Large Lakes Research Station maintains Great Lakes data bases, facilitates exchange between the United States and Canada and develops/applies precision analytical methods directed towards toxic chemical problems such as PCBs, other organochlorine substances, heavy metals, and conventional pollutants for the Great Lakes Basin.

FY-1980 Actual 3.1 (3.1) FY-1985 Current 2.5 (1.7)

FY-1986 Request 1.2 (0.78) FY-1986 House Approved 2.38 (1.6)

---NOAA's Great Lakes Environmental Research Laboratory pursues a systems approach to major Great Lakes environmental issues and receives direction from federal statutes and the U.S.-Canadian Great Lakes Water Quality Agreement of 1978.

FY-1980 Actual 3.4 (3.4) FY-1985 Current 3.8 (2.6)

FY-1986 Request 0.0 FY-1986 House Approved 3.8 (2.5)

---U.S Fish and Wildlife's Great Lakes Fishery Laboratory works with state, provinicial and tribal resource agencies and international commissions to evaluate the effectiveness of current fishery management strategies and the effects of toxic contamination to the biota.

FY-1980 Actual 2.0 (2.0)   FY-1985 Current 2.2 (1.5)

FY-1986 Request 2.2 (1.4)   FY-1986 House Approved 2.8 (1.8)

---Sea Grant Programs sponsors interdisciplinary research on water quality, toxic substances, fisheries, transportation, resource policy, tourism and recreation throughout the eight Great Lakes states. An example of funding history is sited through the Michigan Sea Grant College Program.

FY-1980 Actual 1.1 (1.1)   FY-1985 Current 1.0 (0.68)

FY-1986 Request 0.0   FY-1986 House Approved 1.06 (0.69)

The Great Lakes Congressional Delegation should support provisions and appropriations being reviewed in the Conference Committee of the Clean Water Act to have certain federal agencies coordinate and prioritize the work of these institutions. Increased overall funding levels are needed for the E.P.A.'s Great Lakes National Program and National Oceanic and Atmospheric Administration to obtain these goals.

CONSTRUCTION GRANTS

Construction grant funding under the Clean Water Act has played an essential role in reducing the amounts of conventional wastes into the Great Lakes System. However, the program has not been completed and it is critical that the federal government stands by its earlier committments to improve the quality of our waterways. The construction grant allocation should be based on treatment needs and Great Lakes United believes these needs are represented in the House of Representative recent formula before the Clean Water Act Conference Committee.

NATIONAL PROGRAMS AND THE GREAT LAKES

Nationally, the Environmental Protection Agency's proposed FY 1986 budget would provide the same purchasing power for operation as the agency had in 1973. Since inflationary factors have not been considered in the budgetary process, many fundamental regulatory programs are crippled. This lack of federal committment to environmental protection is despite the significant growth in the agency's statutory mission since its creation in 1970. The General Accounting Office (GAO) reports non-compliance with basic environmental standards by 82 percent of major sources of water pollution and 78 percent of the highest priority active hazardous waste facilities.

While enforcement activities, primarily affecting the Resource Conservation and Recovery Act and Superfund programs has a proposed increase of $34 million in fiscal year 1986, other administrative, research and developmental programs would be further cut or eliminated. In the Great Lakes states programs such as the Coastal Zone Management Act, Water Quality Enforcement, Water Quality Monitoring and Analysis, and the research institutions previously mentioned will be adversely impacted. Even though there are funding increases in hazardous waste programs, the Great Lakes states are still not receiving adequate attention. According to the Federal Funds Information for State (July 31, 1985), the Great Lakes states have only received 26.79% ($89.821 million) of the national superfund monies obligated by EPA for sites from 1982-1984. The EPA's National Priority List of Superfund sites has 38.24% (325) of the national total in the eight Great Lakes states including over 105 sites within the physical boundary of the basin. Only a strong federal committment to the resources of the Great Lakes can reverse this shortfall.

Great Lakes United urges the Congressional Delegation to actively work towards increased budgetary resources for the protection, conservation and proper management of the Great Lakes-St. Lawrence River System. Long-term federal committment will provide the necessary environmental, social and developmental programs for the revitalization of the region. The federal budgatary process needs to recognize the importance of the Great Lakes well into the next decade.

SUPERFUND AND THE GREAT LAKES

Toxic contamination is the single greatest threat to the Great Lakes. There are 105 hazardous waste sites in the Great Lakes drainage basin on the U.S. Superfund Priority List. Only two Superfund sites in the Great Lakes basin have been "cleaned up" under the program. Thousands of other hazardous sites which are not on the priority list are located throughout the basin.

Toxic substances from hazardous waste sites enter the Great Lakes through surface runoff, groundwater migration and evaporation of easily airborne toxics which are later deposited in the lakes through rain, snow and "dry" deposition. Hazardous waste sites may be a significant source of airborne toxics.

Superfund was designed to provide a mechanism for identifying and cleaning up hazardous waste sites, yet progress has been alarmingly slow. Serious threats to public health and the environment already exist. Further delays in clean-up will only make a critical situation worse. Clean-up activity must be accelerated, and standards of remediation need to be developed, improved and implemented. Great Lakes United believes the federal Superfund should be reauthorized with the following provisions:

1. A Mandatory Clean-Up Schedule.

Six clean-ups in five years is unacceptably slow and environmentally irresponsible. At present rates, (six sites cleaned-up in five years), the 812 existing and proposed priority sites would not be cleaned up until the year 2656--an absurd projection at best! Congress should require EPA to move forward, not only with initial investigations and feasibility studies of site-specific clean-up strategies, but most importantly on-site actions to remove, treat or contain hazardous waste. We urge the adoption of an ambitious but urgent schedule of 150 on-site clean up starts each year of the program.

2. Mandatory Clean-Up Standards.

"Clean" sites should be required to meet all existing standards and criteria under the Clean Water Act, the Clean Air Act, the Safe Drinking Water Act and the Resource Conservation and Recovery Act. The consideration of water quality criteria is particularly critical for protecting Great Lakes water quality. Site by site standards as currently practiced provide no assurance to the public that a site is safe once it has been declared "cleaned-up" by the EPA. Proposed waivers are excessively lenient and would compromise public assurance that specific sites would be cleaned-up to levels required of all other regulated sources of pollution. Without mandatory clean-up standards, the United States would be deliberately acting in contradiction to the Great Lakes International Water Quality Agreement of 1978.

3. Citizen Suits.

While citizens currently have the right to sue polluters for damages through state court systems, the federal court system is not open to individual citizens to sue polluters to curtail or prevent damage at hazardous waste sites. Citizens should have access to the federal courts to protect their health and environment.

A GREAT LAKES BASIN SUPERFUND SAMPLER

Hooker Chemical Hyde Park Landfill, Niagara Falls, New York

In spite of years of litigation, and agreements between EPA and Hooker, the Hyde Park landfill remains one of the most serious threats to the survival and viability of the Niagara River, Lake Ontario and the St. Lawrence River. Over 2,000 pounds of dioxin were dumped at this site, and a plume of contaminated leachate has reached the Niagara River Gorge and is slowly seeping through the rock strata into the gorge. Based on water quality criteria in current U.S. law, it has been estimated that Lake Ontario could be rendered unsuitable for drinking water and unable to support many forms of life if only one to three pounds of dioxin reach the lake. The Hyde Park example clearly illustrates a need for mandatory clean-up schedules and mandatory clean-up standards. Lengthy negotiations between the EPA and Hooker have failed to stop the site from leaking. While the area is fenced and has warning signs, there have been no removals of contaminated materials or other types of remedial action at the site. Clean-up action is urgently needed.

Waukegan Harbor, Illinois

Waukegan has the distinction being one of the few U.S. underwater Superfund sites, hosting more than 60,000 cubic yards of sediments contaminated at or substantially above 50 ppm of PCBs at the bottom of Lake Michigan's Waukegon Harbor. PCB's are the most widespread contaminant in the Great Lakes, and are the primary factor in rendering many species of Great Lakes fish unsafe to eat. While some have urged that the PCB's should remain in place rather that risk additional environmental exposures through attempts at clean-up, recent research indicates that bottom dwelling organisms tend to mix and sift bottom sediments and inadvertantly keep PCB's exposed to the food chain and the active environment. Stringent clean-up standards and practices will need to be applied at the Waukegan site to protect Lake Michigan from further PCB contamination. This will also apply to numerous other underwater hot-spots currently not on any federal priority list.

FEDERAL SUPERFUND PRIORITIES IGNORES SOME OF THE BASIN'S MOST SERIOUS TOXIC HOT-SPOTS

Waukegan is the exception to a much larger problem in grappling with toxic contamination in the Great Lakes. Contaminated underwater sediment in basins are generally not eligible for Superfund clean-up money. Although some states classify underwater sites as "superfund sites" the EPA does not consider them to meet its specific criteria. First, they are not easily traced to a specific source. Secondly, although these sites are heavily laden with contaminants, they are not themselves "hazardous waste sites", but rather the downstream byproduct of many sources of hazardous wastes. Finally, the environmental impact most directly affects aquatic life in the lakes and the species which depend on them as a food source, with secondary and long term impacts on people (through drinking water and fish consumption). Because a direct threat to human health is more difficult to establish, these areas are considered less urgent sites. Waukegan was exceptional because the PCB's could be directly attributed to the disposal practices of Outboard Marine Corporation. Many other "toxic hot-spots" in the basin, such as Green Bay, Buffalo River and Saginaw Bay contain a "soup" of materials from multiple industrial, municipal, agricultural and other sources. If Superfund is not designed to address these types of toxic contamination, new programs and initiatives will need to be developed to clean up underwater toxic concentrations in the Great Lakes. The International Joint Commission has identified 18 specific areas in the Great Lakes where there is significant environmental degredation.

Great Lakes United urges the Great Lakes Congressional Delegation to work towards a Superfund program which has a minimum of $10.1 billion, mandatory clean-up schedules and remedial standards and access for citizens to the federal courts. H.R. 2817 and S.51 fall short of these concerns. To adequately protect the citizenry and natural resources of the Great Lakes basin, these provisions need to be included in any final reauthorization of the federal Superfund.

NAVIGATION IN THE GREAT LAKES SYSTEM

Commercial navigation is an important use of the Great Lakes that provides significant benefits to the economies of the United States and Canada. Navigation improvements have, however, sometimes resulted in serious damage to natural resources of the lakes region. Resource damages from future projects can only be prevented by insisting that public policy decisions for the lakes be based on thorough understanding of the ecological consequences of proposed actions. Further, many new navigation projects offer opportunities for mitigation of environmental losses through enhancement of fish and wildlife habitat, and should be incorporated wherever feasible.

WINTER NAVIGATION

Currently, the Soo Locks close on January 8, plus or minus one week depending on shipping demands and environmental conditions. Efforts to significantly extend the winter shipping season are adamantly opposed by conservationists and many shippers. Winter navigation has negative ecological, recreational and economic implications to the Great Lakes Basin. Past proposals were effectively defeated in the 98th Congress under the bipartisan leadership of several Great Lakes Congressmen. It culminated in substitution of authorizing language (Section 1123 of H.R. 3678) and was supported by 222 members of the House. This language should be retained intact in any new Congressional action on winter shipping.

However, studies are nearing completion on proposals to extend the shipping season on the upper lakes for about one additional month. In addition, proposals to build additional locks on the St. Lawrence Seaway are being considered, despite the adverse ecological and economic impacts. Conservationists are certain to oppose any major navigation system expansion, expecially in the Thousand Island area of the river. Great Lakes United urges Congressional members to reject any federal appropriations for these purposes. The Great Lakes Congressional Delegation should continue to oppose:

(1) extended shipping season, and

(2) major physical expansion to the existing navigational system which ignores these ecological concerns.

SOO LOCKS EXPANSION

Construction of a new Poe-sized lock at Sault Ste. Marie has considerable political support in the Great Lakes region. Nevertheless, most independent observers find no economic justification for this $227 million project. If construction of the additional lock is approved, Great Lakes United believes that three provisions should be included in any Congressional authorization.

(1) Dredged materials should be used to enhance the local environment.

(2) An improved traffic monitoring system on the St. Marys River.

(3) Provisions for public access to the St. Marys River Rapids from the U.S. should be sought.

HAZARDOUS/NUCLEAR MATERIAL TRANSPORT

Conservationists have major concerns about inadequate regulation of hazardous materials transported on the Great Lakes. Regulations pertaining to the transport of hazardous material on and across the Great Lakes water bodies should be internationally consistent. Currently, federal provisions do not exist to:

- limit the transport of hazardous material on the Great Lakes-St. Lawrence River System during bad weather conditions.
- make carriers and shippers of hazardous material absolutely liable for accidents on the Great Lakes or across the Great Lakes waterways (e.g. Mackinaw Bridge, Thousand Island Bridge)
- enact basin-wide stringent safety standards for transportation, loading and unloading of hazardous material.

Great Lakes United urges the Great Lakes Congressional Delegation to address these concerns in federal legislation and to suspend the transport of radioactive material on or across Great Lakes waterways until these concerns are addressed.

LEVELS, FLOWS AND DIVERSIONS

Opposition to increased diversions out of or into the Great Lakes Basin is widespread throughout the Great Lakes region. Great Lakes United recognizes the current record-high water levels in the lakes as due to natural conditions and reject "quick-fix" proposals to reduce lake levels. Increased diversions at Chicago, for example, are seen as largely ineffective, contrary to the Great Lakes Charter, and a terrible precedent for this region's ability to protect, conserve, and manage natural resources of the Great Lakes.

GREAT LAKES CHARTER

Regional implementation of the Great Lakes Charter, signed by Great Lakes governors and premiers in 1985, is slowly occuring. Federal iniatives to assist in the implementation of the goals and objectives of the Great Lakes Charter are needed. However, any provisions to allow transfer of water to areas outside the physical boundaries of the basin will pose economic, social and environmental damage to the region. Currently, there is federal legislation pending (1184 and 1185 of H.R. 6) that recognizes some goals and objectives of the Great Lakes Charter. However, the current language does not go far enough and should reflect a policy against diversion outside of the Great Lakes Basin, not just the Great Lakes states.

OHIO RIVER CANAL STUDY PROPOSAL

H.R. 1519 would reopen a Corps of Engineers study on the feasibility of building a 120-mile barge canal from Lake Erie to the Ohio River. Great Lakes United was appalled that half of the bill's 44 cosponsors were from the Great Lakes states. The $3 billion project is inconsistert with the Great Lakes Charter and would entail enormous environmental costs. Great Lakes United feels the project could be transformed into a "diversion machine." We urge Congressional members to oppose H.R. 1519.

CANADIAN GRAND CANAL PROPOSAL

Conservationists were outraged that an idea to dike James Bay (on the Hudson Bay), turn it into a fresh water lake, and divert water through the Great Lakes to other regions of the U.S. is being taken seriously. The ecological, social, economic, and political stakes of this proposal are huge. No Great Lakes issue is potentially as volatile, and the 99th Congress should voice its opposition to this proposal.

CLEAN WATER ACT

The reauthorization of the Clean Water Act is the most critical federal statute in the long-term protection and enhancement of the Great Lakes water quality. Great Lakes United is pleased with the efforts of both Houses of Congress in the reauthorization of the Act. However, any final document from the Conference Committee must contain the following provisions to adequately protect one-fifth of the world's fresh water, the Great Lakes-St. Lawrence System.

1. Maintains a strong industrial "pre-treatment" program to control toxic substances and limit their exposure to the ambient environment.

2. Maintains the current five-year permit period for National Pollution Discharge Elimination System permits, allowing for timely review and updating of these permits to reflect changes in environmental conditions and industrial processes.

3. Contains an "anti-backsliding" provision to encourage rehabilitation of water systems and not just maintaining levels of "acceptable degradation";

4. Develops a non-point pollution control program to begin to address the source of at least 50% of the United States water pollution;

5. Adequately funds publicly owned sewage treatment facilities;

6. Contains a provision to coördinate research and management in the Great Lakes Basin and recognizes the Great Lakes as a national treasure.

7. Identifies and seeks to initiate clean-up of toxic hot-spots in water systems.

8. Enforces wetlands protection under section 404 of the Clean Water Act by transferring authority for wetlands protection from the Corps of Engineers to a more appropriate federal agency.

The Clean Water Act must continue to be an important part of the United States committment to work towards the goals and objectives of the 1978 Great Lakes Water Quality Agreement. Without a strong Conference Committee report and overwhelming Congressional support, the prospect of cleaner waters for the Great Lakes will be diminished.

AIRBORNE TOXIC FALLOUT - AN EMERGING THREAT TO THE BASIN'S ECOSYSTEM

THE PROBLEM

Scientists agree that atmospheric deposition is a major uncontrolled source of the toxic contamination that is now the most serious long term problem for the lakes. Estimates are that 80 percent of the toxic loading to Lake Superior and half the loading to Lake Michigan is from the atmosphere.

Atmospheric deposition was confirmed as a major problem in 1975 when PCBs were found in lake trout in Isle Royale's wilderness in northern Lake Superior. Long range transport was confirmed when the pesticide toxaphene, which was used in the deep south and far wet, was found in the same location in 1980. Levels of these two compounds have declined since they were banned, but hundreds of other toxic substances are also accumulating in the Great Lakes system from the atmosphere.

The Great Lakes are especially vulnerable to accumulation of toxic contaminants because the system is so large and because of the long retention time; only about 1 percent of water flows out to the ocean each year. The lakes are especially vulnerable to atmospheric deposition because of their large surface areas. Moreover, many persistent organic chemicals and heavy metals bioconcentrate at higher levels up the food chain. Large salmon and trout may have concentrations of PCBs or other chemicals at a million times higher concentrations than the levels in water.

Public health warnings against fish consumption are already issued for every Great Lake. There is evidence of developmental effects for infants whose mothers have high levels of PCBs in their bodies due to eating certain fish. There is also evidence that toxic chemicals interfere with natural reproduction and survival of lake trout in Lake Michigan. Genetic defects in fisheating and shore birds are believed to be due to the presence of toxic chemicals. Finally, a relationship between exposure to toxic chemicals and tumors in fish has been demonstrated.

The long term concern is for protection of use of the Great Lakes for drinking water. The immediate concern is preservation of life in the lakes and prevention of human health effects due to fish consumption.

SOLUTIONS

The concept of the need for an ecosystem approach to management in the 1978 Great Lakes Water Quality Agreement with Canada resulted from realization that existing laws and programs do not deal with the problem of long range transport and atmospheric deposition of toxic contaminants into the Great Lakes.

The first step is research to identify and quantify sources and effects. The atmosphere is a diffuse source to the lakes but there must be many sources into the air. Currently there is accumulating evidence that publicly owned treatment plants may be major sources due to evaporation and volatilization during treatment of industrial wastes. Other sources are incineration and agricultural spraying.

The Clean Water Act requires technology-based controls only for direct discharges. The Clean Air Act deals only with human health effects due to direct exposure and does not address indirect exposure due to bioaccumulation. Banning chemicals one by one under TSCA will not be sufficient. These and other laws need to be restructured to address accumulation of toxic contaminants in the ecosystem.

COASTAL ZONE MANAGEMENT ACT AND PLANNING FOR THE FUTURE

The Great Lakes are an unparalleled national resource, providing both employment and enjoyment for the people of this country. Their rich diversity was recognized in the passage of the Coastal Zone Management Act (CZMA) of 1972 which provides for the wise management of our coasts from the Great Lakes to the Gulf, and the Pacific to the Atlantic Oceans.

Reauthorization of the CZMA is important for the future of the Great Lakes. The CZMA balances national interests with state needs, allowing local, state and federal governments to collectively manage more than 9,400 miles of beaches, bays, ports and harbors, wetlands, estuaries, islands and fisheries in the Great Lakes Basin. With ecologically sensitive estuaries and wetlands being lost at a staggering rate, protection of these vital breeding grounds of the Great Lakes' abundant wildlife is imperative.

The House of Representatives has passed a five year reauthorization of the Coastal Zone Management Act, H.R. 2121. However, as of September 10, S. 959, calling for a similar five year reauthorization, awaits Senate approval.

H.R. 2121 continues the federal funding crucial to coherent coastal management, authorizing a FY86 level of $36 million to be increased by 4.5% each year over the subsequent four years. An important change will link continued funding of state programs to state progress in protecting coastal resources of national significance. In addition, H.R. 2121 provides $2.9 million for the study and acquisition of sensitive estuaries, with this level annually adjusted for inflation.

Action on S. 959, which provides funding identical to that of H.R. 2121, must be taken by September 30. Without House and Senate concord, the CZMA will expire, jeopardizing the future of our national coastal resources. Indeed, there is concern over the possibility of an Executive veto of a reauthorized CZMA, making strong Congressional commitment to coastal management essential.

The citizens of the Great Lakes states therfore support the expeditious reauthorization of the Coastal Zone Management Act. Furthermore, we urge Congress to stand behind its pledge to our nation's coasts by resisting any efforts to dismantle the unique local, state and federal partnership developed over the past thirteen years of this highly successful program.

GREAT LAKES UNITED - BOARD OF DIRECTORS - SEPTEMBER 1985

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Mr. WOLPE. Thank you all very much for some excellent testimony.

In 1982 the General Accounting Office recommended that Congress determine whether or not the Great Lakes Water Quality Agreement objectives and commitments were overly ambitious.

The implicit suggestion was that while admittedly we were not in compliance, and the States were not in compliance with respect to the standards, the problem was the standards rather than necessarily only the funding levels for programmatic activity.

I'd be interested in your reaction to that suggestion, all three of you.

Mr. SCHMIDT. The problem is not in the standards, except that they in many cases are inadequate to address the problems with the Great Lakes, or that the standards do not exist.

The State of Michigan has been in the forefront in trying to implement standards through State administrative procedures. The problem is the lack of commitment to fulfillment of those standards.

Certainly, I don't think anyone in our region would suggest that those standards for protection of the Great Lakes are excessive, or that the goals of either the Great Lakes Water Quality Agreement, or the Clean Water Act are excessive.

Mr. MILLER. I'd have to agree with Mr. Schmidt's statement, and also the noncompliance ratio does not relate to the technology available to control toxic pollution to the Great Lakes, but more relates to the lack of Federal funds and other funding levels for enforcement of those programs.

Ms. ELDER. I agree.

Mr. WOLPE. Given current funding levels, and given technology currently available to municipal water districts, how long would it take, in your view, to reach the waste water goals that are currently established in law?

Mr. SCHMIDT. Forever.

Mr. WOLPE. Any other reaction?

Ms. ELDER. Well, we have so many municipalities, for example, out of compliance now, and that doesn't even represent many of the places where we have not even completed the Construction Grants Program. And with the inability to add new funding and new support to those programs, I just don't see how we can improve upon the existing compliance record with the exception of maybe some more stringent enforcement actions by EPA.

But there are a number of cases where we simply don't have the technology on hand in many communities.

Mr. SCHMIDT. The technology is not in place. It is not that it is not available. And that is where the importance of the Pretreatment Program comes into place, and maintaining a strong Pretreatment Program in the current reauthorization of the Clean Water Act is so essential.

But, there are municipalities facing very serious problems with combined sewer overflows that affect the Great Lakes through their tributary discharges. But, it is that Pretreatment Program that we can have a handle on. That is something that goes directly back to the users of the Nation's waters paying the costs of pollution cleanup and directing those costs right back on the source.

Mr. MILLER. I think another point is the nonpoint pollution sources from such hazardous waste sites, Superfund sites throughout the basin. Unless we move rapidly to remediate those sites, we are going to continue to not meet the goals and objectives of the 1978 Great Lakes Water Quality Agreement between the United States and Cañada and continue to have toxic contamination to the Great Lakes system.

For example, in western New York, the Niagara Gorge, there are levels of dioxin right now being found going down the gorge face into the Niagara River. And scientists are finding levels of dioxin in fish and turtles and other parts of the habitat into Lake Ontario and the St. Lawrence River.

And so this problem is spreading. And, unless there is a strong Federal commitment to move quickly to remediate these problems, we will continue not to meet the goals and objectives of the water quality agreement.

Mr. SCHMIDT. Keep in mind also that many of the problems we don't know how to solve, because we don't even know what the source of the problems are. Atmospheric deposition of pollutants is the most—I think the most pointed example of that. We realize that, for example, in Lake Michigan half of many of the pollutants entering the lake are coming from the atmosphere.

Some of the sources are relatively well understood, such as emissions from municipal treatment plants and so on going into the air. But, the overall scope of the problem, even though we understand that is very serious, has not been addressed. The research has barely begun on those problems.

You asked earlier about where do you define the State/Federal line. That is a good question. But here is clearly a case where you are dealing with interstate and international problems. That has to be a Federal commitment.

Mr. WOLPE. Mr. Schmidt, you mentioned in your testimony, your view that there were some elements of the programs directed at the Great Lakes that you would just as soon see diminished. And that there were, to some extent, some shifting of dollars that you suggest would be one means of meeting the financial obligations that are important to be met.

You specifically talk about the opposition of Michigan United Conservation Clubs to the expansion of the Coastal Barrier Resources Act to include the Great Lakes, and you referred also to your opposition of the construction of a new lock at Sault Ste. Marie. Could you expand upon the basis for your opposition to those initiatives?

Mr. SCHMIDT. Let me preface that by saying the question of the Sault lock is much—is part of a much more serious concern from our membership and I think the people in the Midwest generally, about Federal expenditures on pork barrel water projects nationwide. We characterize this as our piece of the pork, our water project in the State.

But our analysis of it, the economic analysis completed by the National Wildlife Federation suggests that this cannot be justified, particularly in times of economic austerity as we are facing now. We think there are much better ways that those Federal dollars can be invested in the future of our region and the economics of revitalizing our region.

On the question of the Coastal Barriers Program, that is an issue that has not yet reached the Congress. It is still being considered as a recommendation from the Department of Interior. Most of those areas proposed for designation fall within our State—111 areas in the State of Michigan.

We do not think that this was a well-thought out program. There is not a great deal of real logic in the delineation of those areas within our State. And most importantly, we feel that the State of Michigan has excellent programs in place to protect these areas through State law and through State administrator programs. And we don't feel that an additional layer of Federal regulation on these areas, and most importantly, the Federal expenditures that go along with the administration and enforcement of that program can be justified.

Mr. WOLPE. Would either of the other panelists have any reaction to either of those subjects?

Ms. ELDER. I don't think we have as an organization, a position on either topic. But, we do share the concerns about the Sault lock complex and the interrelationship of the Sault lock situation with other navigation programs throughout the Great Lakes as well as for specified Federal "pork" going for programs that may or may not be beneficial to the environment.

We certainly encourage the congressional delegation to seriously look at the long-term impacts of navigation expansion in the Great Lakes. I am not familiar enough with the other program to make specific comments.

Mr. MILLER. Great Lakes United does not have a position on the Coastal Barriers Program, but agrees with Mr. Schmidt's comments on the Sault lock project and other projects such as the Ohio River Canal study project, if moneys were appropriated for those types of projects.

We feel those moneys should be transferred and put into programs that will improve the water quality of the Great Lakes.

Mr. WOLPE. There has been, as you know, considerable media attention focused upon the prospect of diversion of the Great Lakes waters. How serious are some of these suggestions that have been made, and—how imminent is the possible threat of diversion of Great Lake waters?

Mr. SCHMIDT. I'll mention three examples.

There has been consideration of increasing the diversion at Chicago. It would be primarily in reaction to the very real concerns of property owners around the Great Lakes as a result of current high water levels.

Most people believe that the precedent that would be established by that does not justify that as an action at this time. That is a long-running feud about increasing that diversion at Chicago. We don't think that is likely to happen in the near future.

There are two more, much more pressing issues though that we are very much concerned about. We are talking about diversion in and diversion out. One is the proposal by Congressman James Traficant in H.R. 1519 to reauthorize study of connecting a diversion canal between Lake Erie and the Ohio River basin.

That is an absurd proposal and we are uniformly opposed to any further consideration of that. Even the Corps of Engineers deauthorized that some years back.

The other comes from our Canadian friends. There is considerable discussion at very high levels in the Quebec government, discussions with U.S. politicians about diverting waters from James Bay down into the Great Lakes for ultimate redistribution to other parts of the Nation.

The ecological effects of that are staggering to contemplate, and the economic costs of that are quite profound. And again, this is a proposal being taken very seriously. So, when you ask, is this something that has to be looked at seriously, here are two examples where, yes, it has to be looked at very seriously.

Mr. **Miller**. My only comment would be, we must concentrate not only on diversion proposals to the Southwest United States, but also within the States of the eight Great Lake States, or within the region of the Great Lakes basin.

Great Lakes United is opposed to any diversions outside the Great Lakes basin. And there is talk and consideration of increased use of Great Lakes waters outside the Great Lakes basin, but in some instances within the eight Great Lakes States.

And whether it goes to the Southwest, or it goes to the Ohio River or south of Chicago, even possibly to eastern New York, those will all have the same impact to the Great Lakes system. They will drain the Great Lakes waters of the needed water resources.

Ms. **Elder**. In terms of how seriously all this should be taken, one of the things I would like to encourage, is an active role on the part of Congress because there are multiple jurisdictions involved.

Obviously, there are interstate relationships, intrastate relationships, international concerns, and of course the Federal role. And there are many questions as to who actually owns the Great Lakes water.

Congress has the opportunity to play the role of being vigilant in this matter, making sure that if there are uses of the Great Lakes basin waters, they stay within the basin. But any major diversion project within the United States would certainly require massive amounts of funding.

And, while people say Congress would never authorize such a thing as money for Great Lakes diversion, we have seen authorization of projects like Tennessee-Tombigbee and others that we felt were economically and environmentally infeasible.

So, I would encourage long-term congressional vigilance to keep an eye out for these sorts of things. And also to realize that it is in no one's best interest to use Federal dollars to divert money out of the Great Lakes basin.

Mr. **Schmidt**. If I could add just one more comment. As you know, Congressman, there is probably no more volatile issue surrounding the Great Lakes within the district than the issue of diversion. And this Congress should certainly be aware of that.

Mr. **Wolpe**. I'm trying to develop the record, and that is why I wanted to hear your reactions to that issue.

About 2 years ago, I had the opportunity of attending a meeting with the International Joint Commission in Toronto. And at that point in time—with some members of the Canadian Parliament meeting with members of the Northeast-Midwest Congressional Coalition—there was serious concern on the Canadian side about a failure to monitor not just the issue of what was going into the lakes, but the issue of consumptive uses of the lake. And at that juncture there was concern about water levels being reduced to a level that was beginning to threaten some areas surrounding the Great Lakes.

Has there been any improvement—and their concern was an institutional one. The failure to coordinate, the failure to take seriously that whole issue of just ongoing consumptive uses, aside from the broader question of diversion plans and schemes that had been discussed from time to time.

Mr. MILLER. Hopefully, the Great Lakes Charter of 1985 signed by the eight Great Lakes State Governors and two Canadian Premiers, Provincial Premiers, will address that situation.

Right now, certain jurisdictions within the Great Lakes are passing State or Provincial legislation to incorporate the goals and objectives of the Great Lakes charter and to coordinate consumptive use, research, and management throughout the Great Lakes basin.

At this point we would like to see that move more rapidly than it is, but the Great Lakes jurisdictions are meeting, they are sitting down in a task force—one of their last meetings was last week in Michigan. And they are moving forward with this program. And, there are different State laws that are going forward to put appropriate budgetary State funds toward this effort.

Ms. ELDER. Wisconsin has just drafted legislation. States are moving ahead.

Mr. WOLPE. Good.

Well, I want to thank you all. I want to take this opportunity particularly to express my appreciation to the Sierra Club for the assistance they have lent on our efforts at putting into the farm legislation a very strong soil conservation provision which will still be before us today in the debate this afternoon. But, it has been enormously helpful, and we have, I think, generated an unusual coalition involving agricultural interests, environmentalists, people concerned about urban runoff problems within urban areas and the like. And it has just been a very constructive, very helpful initiative, I think.

Ms. ELDER. Well, we certainly appreciate your attention in that area, because nonpoint pollution sources in the Great Lakes are one of the areas that receive the least amount of attention. Good soil conservation programs will do a lot to keep both sedimentation and a lot of pesticides out of the Great Lakes. So, thank you very much.

Mr. WOLPE. Thank you all, very much.

Now, I would like to invite a panel that will focus upon the issue of research. We have three witnesses who will testify. Michael Quigley, who is an ecologist and president of Local 3908 of the American Federation of Government Employees, which represents scientists and support staff for NOAA's Great Lakes Environmental Research Laboratory. Also, Dr. Alfred Beeton of the Center for Marine Waters and John Jackson of the Canadian division of Friends of the Earth.

Thank you all for giving of your time and expertise this morning. Again, I would like to indicate that your full written statements will be entered in the record in their entirety. I would ask you to summarize your testimony at this point.

STATEMENT OF MICHAEL A. QUIGLEY, ECOLOGIST, ECOSYSTEM AND NUTRIENT DYNAMICS GROUP, NOAA, GREAT LAKES ENVIRONMENTAL RESEARCH LABORATORY, AND PRESIDENT, LOCAL 3908, AMERICAN FEDERATION OF GOVERNMENT EMPLOYEES

Mr. QUIGLEY. Thank you, Congressman Wolpe.

My name is Michael A. Quigley. I am an ecologist in the Ecosystem and Nutrient Dynamics Group at NOAA's Great Lakes Environmental Research Lab in Ann Arbor, MI. And, throughout the testimony I will be referring to the lab's name using the acronym GLERL.

Today I will testify as president of the union that represents the scientists and support staff of the laboratory, Local 3908, American Federation of Government Employees.

First off, on behalf of GLERL's staff, I would like to begin by thanking Congress for its continued support of our laboratory in reversing four attempts by the Reagan administration to zero fund our facility in each of the proposed fiscal year 1983-86 budgets. These closure attempts have continued in spite of:

One, recognition of GLERL as one of NOAA's outstanding research laboratories.

Two, the closure attempts have continued in spite of two reclama attempts from the Commerce Department to the Office of Management and Budget, to reinstate GLERL within the administration's proposed budget. Those were fiscal year 1985, fiscal year 1986.

Third, the closure attempts have continued in spite of repeated diplomatic notes from Canada warning that GLERL's closure would violate Great Lakes research commitments outlining the United States-Canada 1978 Water Quality Agreement.

Moreover, OMB's steadfast refusals to acknowledge the broad and consistent congressional support of our lab—and I should also note for other Great Lakes research programs—now forces both the House and Senate to periodically restore GLERL's funding.

It is unfortunate that Congress must annually commit time and resources in renewing a program that is recognized as essential both inside and outside the administration.

GLERL is not the only Great Lakes research program perennially targeted for closure by the Reagan administration. During the past 4 years, OMB has completely zeroed out Great Lakes research funded through NOAA's National Sea Grant Program.

In addition, EPA's Large Lake Research Station in Grosse Ile, MI, and EPA's Great Lakes National Program Office in Chicago, have been scheduled for partial or total funding elimination.

Fortunately, Congress has restored these programs that are vital for the intelligent and a cost-effective management of the Great Lakes.

Now, although Congress has managed to restore funding for GLERL Large Lakes Research Station, Great Lakes National Program Office, and Sea Grant, these programs have suffered adverse effects caused by year to year uncertainty about their continued existence.

At GLERL, 4 successive years of proposed zero funding has, one, resulted in the loss of key personnel who left to accept more secure jobs elsewhere. These include one senior scientist, two midlevel managers, and our publication editor of 10 years.

This attrition is further compounded by the difficulty in hiring replacements, because qualified candidates are often reluctant to leave previous positions to face an uncertain future at GLERL.

Second, proposed zero funding has continued to delay GLERL's acquisition of a new permanent rented facility. Last year Congress appropriated $350,000 for consolidating GLERL from its present five locations around Ann Arbor into one building.

GLERL is presently located in temporary facilities that were never designed to be used as laboratories. Consequently, space is extremely limited and safety conditions are only marginal.

As for EPA's Large Lakes Research Station and Great Lakes Sea Grant Programs, they, too, have suffered from attrition. The Large Lakes Research Station experienced a particularly large departure of staff during early closure attempts. Among those leaving was the Director then, Wayland Swain.

Federal Great Lakes research efforts have also been progressively handicapped by erosion of their budget base. Although Congress has ensured year-to-year survival, program funding has often not kept pace with the cost of living. For example, in terms of 1980 dollars, our lab budget has declined by 17 percent over fiscal year 1982 through 1986, while at EPA's Large Lake Research Station, our budget has dropped some 24 percent over this interval.

At GLERL, budget erosion has resulted in one, loss of seven temporary positions that are usually held by university students from universities such as Michigan, University of Detroit, Eastern Michigan University. As technicians, students play an important role at GLERL in frontline collection and analysis of data.

The loss of the seven positions is twofold, because it now means that fewer students will be afforded the opportunity for valuable first-hand experience in Great Lakes research.

Second, budget erosion has caused declines in funds for extramural contracts that have subsidized productive collaborative work between GLERL and major universities in Michigan, Ohio, Minnesota, Wisconsin, and New York.

Third, budget erosion has resulted in a reduction in buying power needed to maintain state of the art instrumentation. This has particularly limited GLERL's capacity to analyze a wide range of toxic organic compounds in Great Lakes' waters, sediments and biota.

This problem is particularly critical in light of the recent Federal interagency task force report that cited limitation in analytical capabilities as a major bottleneck restricting further investigation of the cycling of toxic organics in the Great Lakes.

The problem is heightened by the fact that increases in the cost of scientific equipment often exceed normal cost-of-living increases. As a result, buying power is further diminished.

In closing, I would like to note that in May 1982, the General Accounting Office reported to Congress that, "A more comprehensive approach is needed to clean up the Great Lakes."

The report recommended that NOAA establish a Great Lakes research office to coordinate and carry out needed research activity. Now, almost 3½ years later, that office does not yet exist.

Moreover, the research efforts it was supposed to coordinate have been weakened by the trauma of repeated closure attempts and by the erosion of their budgets.

Are Federal Great Lakes research programs better off today than they were 4 years ago?

They most certainly are not. They are worse off and their health and integrity are declining with the onset of each additional fiscal year. Unless we take decisive action in the immediate future to protect and preserve these programs, we will soon witness an alarming decline in our ability to effectively manage Great Lakes resources.

Similar concerns have been expressed in a 1982 annual report of the International Joint Commission's Great Lakes Science Advisory Board. To quote that report:

> If research is not adequate, it will be difficult to identify problems, understand the cause-effect relationships, predict ecosystem responses or behavior, and ultimately improve the management of the Great Lakes. It is important to detect as early as possible subtle changes in water quality. Once the problems have become obvious, solutions and recovery may take decades. If the problem is irreversible, recovery may never occur.

Thanks very much for allowing me to testify here today.

[The prepared statement of Mr. Quigley follows:]

PREPARED STATEMENT OF MICHAEL A. QUIGLEY

My name is Michael A. Quigley and I am an ecologist in the Ecosystem and Nutrient Dynamics Group at NOAA's Great Lakes Environmental Research Laboratory (GLERL) in Ann Arbor, Michigan. Today, however, I will testify as president of the union that represents the scientists and support staff at the laboratory (Local 3908, American Federation of Government Employees).

On behalf of GLERL's staff, I'd like to begin by thanking Congress for its continued support of our laboratory in reversing four attempts by the Reagan administration to zero-fund our facility in each of the proposed fiscal year 1983–fiscal year 1986 budgets. These closure attempts have continued in spite of:

(1) Recognition of GLERL as one of NOAA's outstanding research laboratories.

(2) Two reclama requests from the Commerce Department to the Office of Management and the Budget to reinstate GLERL within the Administration's proposed budget (for fiscal year 1985 and fiscal year 1986).

(3) Repeated diplomatic notes from Canada warning that GLERL's closure would violate Great Lakes research commitments outlined in the United States-Canada 1978 Water Quality Agreement.

Moreover, OMB's steadfast refusal to acknowledge the broad and persistent Congressional support of our lab now forces both the House and the Senate to periodically restore GLERL's funding. It is unfortunate that Congress must annually commit time and resources in renewing a program that is recognized as essential both inside and outside the administration.

GLERL is not the only Great Lakes research program perennially targeted for closure by the Reagan administration. During the past 4 years, OMB has completely zeroed out research funded through NOAA's National Sea Grant program. In addition, EPA's Large Lake Research Station (LLRS), Grosse Ile, Michigan and EPA's Great Lakes National Program Office (GLNPO) in Chicago have been scheduled for partial or total funding elimination. Fortunately, Congress has restored these programs that are vital for the intelligent and cost-effective management of the Great Lakes—a vast resource that constitutes 95 percent of our Nation's surface water.

Although Congress has managed to restore funding for GLERL, LLRS, GLNPO, and Sea Grant, these programs have suffered adverse effects caused by year to year uncertainty about their continued existence. At GLERL, four successive years of proposed zero funding has:

(1) Resulted in the loss of key personnel who left to accept more secure jobs elsewhere. These include one senior scientist, two mid-level (Group) managers and our publications editor (of 10 years). This attrition is further compounded by the difficulty in hiring replacements because qualified candidates are often reluctant to leave a previous position to face an uncertain future at GLERL.

(2) Continued to delay GLERL's acquisition of a new permanent rented facility. Last year, Congress appropriated $350K for consolidating GLERL from its present five locations around Ann Arbor, into one building. GLERL is presently located in temporary facilities that were never designed to be used as laboratories. Consequently space is extremely limited and safety conditions are only marginal. Last November, the Commerce Department authorized a market survey of prospective contractors to build and rent the new facility. Ten companies initially responded, but, following February 1985 news reports of GLERL's proposed closure, only one contractor actually responded to the solicitation. If approval is not granted by mid-October, the entire solicitation process must be reinitiated. It is doubtful that any contractor will respond next year.

As for the EPA's LLRS and Great Lakes Sea Grant programs; they too have suffered from attrition. The Large Lakes Research Station experienced a particularly large departure of staff during early closure attempts. Among those leaving was Wayland Swain, LLRS Director.

Federal Great Lakes research efforts have also been progressively handicapped by erosion of their budget base. Although Congress has insured year to year survival, program funding has often not kept pace with cost of living. For example, in terms of 1980 dollars, the GLERL budget has declined by 17 percent over fiscal year 1982–86 while EPA's LLRS has dropped by 24 percent over this interval. At GLERL, budget erosion has resulted in:

(1) The loss of seven temporary positions that are usually held by university students (from University of Michigan, University of Detroit and Eastern Michigan University). As technicians, students play an important role at GLERL in the frontline collection and analysis of data. The loss of the seven positions is twofold because it now means that fewer students will be afforded the opportunity for valuable first-hand experience in Great Lakes research.

(2) Declines in funds for extramural contracts that subsidize productive collaborative work between GLERL and major universities (in Michigan, Ohio, Minnesota, Wisconsin and New York).

(3) A reduction in buying power needed to maintain state of the art instrumentation. This has particularly limited GLERL's capacity to analyze a wide range of toxic organic compounds in Great Lakes water sediments and biota. This problem is particularly critical in light of a recent Federal interagency task force report that cited limitation in analytical capabilities as the major bottleneck restricting further investigation of the cycling of toxic organics in the Great Lakes. The problem is heightened by the fact that increases in the cost of scientific instrumentation often exceed normal cost of living increases. As a result, buying power is further diminished.

In closing, I'd like to note that in May 1982 the General Accounting Office reported to Congress that: "A more comprehensive approach is needed to clean up the Great Lakes." The report recommended that NOAA establish a Great Lakes research office to coordinate and carry out needed research activity. Now, almost 3½ years later, that office does not yet exist. Moreover, the research efforts it was supposed to coordinate have been weakened by the trauma of repeated closure attempts and by the erosion of their budgets.

Are Federal Great Lakes research programs better off today than they were 4 years ago? They most certainly are not. They are worse off and their health and integrity are declining with the onset of each additional fiscal year. Unless we take decisive action in the immediate future to protect and preserve these programs, we will soon witness an alarming decline in our ability to effectively manage Great Lakes resources. Similar concerns have been expressed in a 1982 annual report of the International Joint Commission's Great Lakes Science Advisory Board:

"If research is not adequate, it will be difficult to identify problems, understand the cause-effect relationships, predict exosystem responses or behaviour, and ultimately improve the management of the Great Lakes. It is important to detect as early as possible subtle changes in water quality. Once problems have become obvious, solutions and recovery may take decades. If the problem is irreversible, recovery may never occur."

STATEMENT OF ALFRED M. BEETON, DIRECTOR, MICHIGAN SEA GRANT COLLEGE PROGRAM

Mr. BEETON. I'm very pleased to be here today, Chairman Wolpe. I am pleased that you are conducting these hearings. It certainly gives encouragement to those of us concerned about the Great Lakes.

However, I am alarmed and discouraged that the present administration apparently views the Great Lakes strictly as an unimportant resource not worthy of Federal support, as witnessed by the attempt to eliminate the Great Lakes Environmental Research Laboratory of NOAA, and drastically cut the budget of the EPA Large Lakes Laboratory at Grosse Ile.

The loss of these research facilities and staff, plus the elimination of the National Sea Grant College Program which had programs in all the Great Lakes States except Pennsylvania, would seriously hamper, if not eliminate the scientific community's ability to deal with critical problems.

Fortunately, Congress has not supported the administration in this, and Congress has recognized the economic and environmental importance of the lakes.

With 95 percent of the Nation's fresh surface water, the Great Lakes are of major importance to our country and to Canada as well. We must not take lightly our guardianship of this resource. We cannot tolerate a parochial attitude which suggests Great Lakes problems are purely the concern of Great Lakes States.

Only 15 percent of the U.S. population lives in the Great Lakes basin. But, the basin supports economic activity that accounts for about 25 percent of the U.S. annual national income. The prosperity of the region and the health of the lakes cannot be viewed as merely regional any more than can the national interest in the west coast, which has only three States and less than 3,000 miles of coastline.

If we can learn from history, we can see that the Great Lakes need increased surveillance in the search to ensure that serious problems are recognized and clearly defined so they can be dealt with before corrective measures become overly expensive.

Three Federal research laboratories and the federally funded Sea Grant Program are located in Michigan. They comprise a major component of the total research effort on the Great Lakes. I have referred to two of the labs, the Great Lakes Environmental Research Laboratory and the Large Lakes Lab of EPA.

The third lab is the Great Lakes Fishery Laboratory of the U.S. Fish and Wildlife Service.

And then, there is my own program, the Michigan Sea Grant College Program.

Each of these has distinct programs which complement one another. Their close proximity facilitates the sharing of ideas, goals and results. Elimination of any one of these will seriously constrain our research capability. Good management relies on a thorough understanding of the complex interaction of natural resources. Without adequate funds Great Lakes research will not be able to deal with existing problems, and we will be especially vulnerable to the consequences of new problems which go undetected.

We are presently faced with critical problems related to the source, fate, and effects of innumerable toxic contaminants that are finding pathways in the Great Lakes system, into the fish, and potentially into man.

Everyone agrees that we are faced with new problems and many continuing ones. In many discussions with the other laboratory directors, State agency personnel, and other colleagues, we have identified several critical issues in these major categories: Contaminants, including the toxics I mentioned; water quantity, which includes the diversion possibility; loss of habitat; and introduction of exotic species.

Now, in dealing with these problems, there are certain constraints. Top among these constraints are funds for research. Decreased funding, level funding, and/or only modest increases in funding have resulted in overall reduction in funds in 1980 dollars available to solve these critical issues.

For example, in 1980 for the three Federal labs and Michigan Sea Grant, there were $9.6 million allocated. In terms of 1980 dollars, the amount allocated for 1985, was $6.48 million. Congress has approved, for 1986, $6.59 million in 1980 dollars. So, there is a decrease regardless of how you look at it. The administration requested for 1986, in 1986 dollars, $3.4 million, or $2.18 million in 1980 funds.

So, there is a very definite problem for all of the Great Lakes research institutions, especially the Federal agencies and universities.

The second constraint on dealing with the problems is that of personnel. Loss of trained personnel to other regions and/or occupations is a problem for all Great Lakes research institutions.

Fewer research projects in universities is resulting in fewer students being trained to deal with critical issues in the future. Enrollment in environmentally oriented courses has dropped dramatically.

The ability of an institution such as the University of Michigan to make advances in environmental research, and to train graduate students, is largely dependent on grants and contracts.

For example, the organization which I head up, the Great Lakes and Marine Water Center at the University of Michigan, had a staff of 160, including 55 students, in January of 1980. Today our staff has been reduced to 60, of which 20 are students.

The third constraint is that of laboratory space and equipment. Great Lakes research suffers from inadequate laboratory space, especially at the Great Lakes Environmental Research Laboratory, NOAA; outmoded equipment such as antiquated analytical instrumentation and lack of state-of-the art computers at the Large Lakes Research Station, EPA; and poor facilities at most academic institutions and the Great Lakes Environmental Laboratories.

[Testimony resumes on p. 72.]

[The prepared statement of Mr. Beeton follows:]

PREPARED STATEMENT OF ALFRED M. BEETON

I am Alfred M. Beeton, Director of the Great Lakes and Marine Waters Center and Professor of Atmospheric and Oceanic Science and Professor of Natural Resources at The University of Michigan. I also serve as Director of the Michigan Sea Grant College Program which is a cooperative education, research and advisory service program between Michigan State University and The University of Michigan. Researchers from other state universities, such as Eastern Michigan, Michigan Technological, Northern Michigan and Wayne State, have participated in cooperative research projects with us. I personally have been involved in Great Lakes research since 1955 as a Federal employee, professor, advisor to State agencies, and consultant to industry and international commissions. I am presenting this statement as a concerned citizen and not as a spokesman for any agency, institution or organization.

I am alarmed and discouraged that the present administration views the Great Lakes strictly as an unimportant resource not worthy of Federal support, as witnessed by the attempts to eliminate the Great Lakes Environmental Research Laboratory of NOAA and drastically cut the budget of the EPA Large Lakes Laboratory at Grosse Ile. The loss of these research facilities and staff plus the elimination of the National Sea Grant College Program, which has programs in all the Great Lakes states except Pennsylvania, would seriously hamper, if not eliminate, the scientific communities' ability to deal with critical problems. Fortunately Congress has not supported the administration and Congress has recognized the economic and environmental importance of the lakes.

With ninety-five percent of the nation's fresh surface water, the Great Lakes are of major importance to our country and to Canada as well. We must not take lightly our guardianship of this resource. we can not tolerate a parochial attitude which suggests Great Lakes problems are purely the concern of the Great Lakes states. Only 15 percent of the U.S. population lives in the Great Lakes basin, but the basin supports economic activity that accounts for about 25 percent of U.S. annual national income. The prosperity of the region and the health of the lakes can not be viewed as merely regional any more than the nation's interest in the West coast, with only three states and less than 3,000 miles of coastline, can be viewed as regional.

If we can learn from history we can see that the Great Lakes need increased surveillance and research to ensure that serious problems are recognized and clearly defined so they can be dealt with before corrective measures become overly expensive. We have been successful in dealing with the adverse effects of DDT on birds, the predatory sea lamprey after it decimated lake trout populations, and the over enrichment of Lake Erie, through sound management decision based on high-quality research.

Three Federal research laboratories and a federally funded Sea Grant Program are located in Michigan. These comprise a major component of the total research effort on the Great Lakes. These are the:

- Great Lakes Environmental Research Laboratory
  (GLERL)National Oceanic and Atmospheric
  Administration (Ann Arbor)
- Great Lakes Fishery Laboratory
- U.S. Fish and Wildlife Service (Ann Arbor
- Large Lakes Research Station, Environmental Protection
  Agency (Grosse Ile)
- Michigan Sea Grant College Program,
  Michigan State University (East Lansing)
  The University of Michigan (Ann Arbor)
  National Oceanic and Atmospheric Administration

Each of these has distinct programs which complement one another. Their close proximity facilitates the sharing of ideas, goals and results. The effectiveness of these research programs have been hampered by reduced or level funding over a number of years. Elimination of any one of these will seriously constrain our research capability.

Good resource management relies on a thorough understanding of the complex interactions of natural systems. Without adequate funds for Great Lakes research we will not be able to deal with existing problems and we will be especially vulnerable to the consequences of new problems which go undetected. We are presently faced with the critical problems of the source, fate, and effects of innumerable toxic contaminants that are finding pathways in the Great Lakes system, its fish and, potentially man.

Everyone agrees that we are faced with new problems and many continuing problems. In my discussions with laboratory directors, state agency personnel, and other colleagues it is evident that we need research to deal with critical issues in four major categories: contaminants, water quantity, loss of habitat, and introduction of exotic species.

Contaminants

Toxic organics and heavy metals enter the lakes from the atmosphere and point sources. They affect the biota and human use of surface and ground water. Residues in sediments are of special concern. The character of contaminants, their sources, and their effects on biota and humans, need to be better known. Control strategies need to be developed.

Over-enrichment (eutrophication) of lake water is occurring as a consequence of excessive discharge of nutrients in sewage and/or from farmland and urban areas. Better means of control are needed.

Water Quantity

Diversions into and out of the lakes could adversely affect wetland habitat and the importance of the lakes to shipping and hydroelectric power.

Increasing consumptive use of lake water for irrigation, municipalities, manufacturing, and power generation may lower lake levels and result in some of the same concerns diversion would cause.

Cyclically high lake levels due to high precipitation accelerate shore erosiion and loss of valuable property.

Loss of Habitat

Wetlands important for spawning, young fish, and wildlife have been disappearing due to filling and draining for residential, industrial, and agricultural uses. Remaining habitat must be protected and means developed to enhance or create additional habitat.

Severe pollution of nearshore areas and bays make these areas uninhabitable for many species. Pollution controls are needed to prevent further reduction in habitat.

Introduction of Exotic Species

Sea lamprey control continues to be of major concern. If not controlled, the sea lamprey could wipe out populations of large sport and commercial fish.

The effects of other exotic fish species are not completely known. They may adversely affect native species, although some provide an excellent recreational fishery.

CONSTRAINTS

The following are major constraints to effectively dealing with the issues.

> Funds for Research - Decreased funding, level funding, and/or only modest increases in funding have resulted in an overall reduction in funds (1980 dollars) available to solve critical issues, including funding for cooperative projects. This is a problem for all Great Lakes research institutions, especially federal agencies and universities.
>
> Personnel - Loss of trained personnel to other regions and/or occupations has occurred due to inadequate funding. This is a problem for all Great Lakes research institutions. Fewer research projects in universities is resulting in fewer students being trained to deal with the critical

issues in the future. Enrollment in environmentally-oriented courses has dropped dramatically.

The ability of an institution such as the University of Michigan to make advances in environmental research and to train graduate students is largely dependent on grants and contracts. For example, the Great Lakes and Marine Waters Center of the University had a staff of 160, including 55 students in January 1980. Today our staff has been reduced to 60, of which 20 are students.

Laboratory Space and Equipment - Great Lakes research suffers from inadequate laboratory space, especially at the Great Lakes Environmental Research Laboratory (NOAA); outmoded equipment such as antiquated anayltical instrumentation and lack of state-of-the art computers at the Large Lakes Research Station (EPA); and poor facilities at most academic institutions and the Great Lakes Environmental Research Laboratory.

FUNDING HISTORY OF SELECTED GREAT LAKES PROGRAMS

(dollars in millions)
(numbers in parentheses refer to 1980 dollars)

	FY-1980 Actual	FY-1981 Actual	FY-1982 Actual	FY-1983 Actual	FY-1984 Actual	FY-1985 Current	FY-1986 Request	FY-1986 House Approved
Great Lakes Environmental Research Laboratory (GLERL)	3.4 (3.4)	3.4 (3.1)	3.6 (3.0)	3.6 (2.7)	3.6 (2.6)	3.8 (2.6)	0.0	3.8 (2.5)
Great Lakes Fishery Laboratory	2.0 (2.0)	2.1 (1.9)	2.1 (1.7)	2.1 (1.6)	2.1 (1.5)	2.2 (1.5)	2.2 (1.4)	2.8 (1.8)
Michigan Sea Grant College Program	1.1 (1.1)	1.2 (1.1)	1.2 (1.0)	1.0 (0.75)	0.95 (0.67)	1.0 (0.68)	0.0	1.06 (0.69)
U. S. EPA Large Lakes Research Station	3.1 (3.1)	2.5 (2.3)	2.5 (2.1)	2.5 (1.9)	2.6 (1.8)	2.5 (1.7)	1.2 (0.78)	2.38 (1.6)

Approval of the Administration's budget request would have caused the loss of $6.1 million in Great Lakes research funds to these four agencies located in Michigan.

STATEMENT OF JOHN JACKSON, CANADIAN DIRECTOR-AT-LARGE, GREAT LAKES UNITED AND FRIENDS OF THE EARTH CANADA

Mr. JACKSON. I am speaking primarily today as the Canadian board member of Great Lakes United, an organization that was just described to you by Mr. Miller, and an organization of which Friends of the Earth is a member.

As you stated at the beginning of this session, governments of the United States and Canada have formally recognized their joint stewardship of the Great Lakes through many agreements and cooperative mechanisms that they have set up.

Fulfillment of the commitments made both in the United States and Canada require that the governments in all jurisdictions make substantial financial contributions to these programs.

In my testimony I will focus on the need for financial support from the U.S. Federal Government for research on water quantity and water quality.

As was just stated, there are growing calls for access to the seemingly unlimited waters of the Great Lakes. Great Lakes United is convinced that the environmentally preferable and financially cheaper solution to these water quantity problems, is to protect the water sources already in use. Therefore, we urge the U.S. Federal Government to financially support research programs on the following topics:

Methods for cleaning up already contaminated water supplies; and, methods for conserving water.

Potential water conservation strategies into which research money should be put, include increasing irrigation efficiencies, recycling industrial coolant waters, and developing household fixtures and appliances that use less water.

We also urge the U.S. Government not to provide financial support to research on methods for water diversion from the Great Lakes basin.

In the area of water quality, the United States and Canadian Federal Governments signed the Great Lakes Water Quality Agreements in 1972 and 1978. Substantial progress has been made under these agreements, but there is still much work to be done.

In the research field, some of the areas requiring particular attention and financial commitment by the Federal Government are:

Strategies for preventing further loadings of hazardous waste into the Great Lakes. These should include recycling, phasing out the use of those toxic substances for which we do not have safe disposal technologies, and developing less toxic substitutes.

We also need research on methods for effectively cleaning up hazardous waste sites, on methods for cleaning up the 42 areas of concern in the Great Lakes basin that have been identified as seriously environmentally degraded by the Great Lakes Water Quality Board, a body that advises the International Joint Commission.

In addition, research needs to be carried out on the long-term effects of the low levels of contamination of Great Lakes waters, and on the impacts of contamination on downstream areas such as the St. Lawrence River.

Earlier today it was pointed out to you that there is substantial concern about the long-range transportation of hazardous substances through the atmosphere. We need more research on the identification of the sources of those hazardous substances and on their impacts.

We have some overall concerns on research, some of which have already been pointed out to you by the two members of this panel.

Lack of coordinated long-term planning for allocation of research moneys, has resulted in these research programs not achieving their full potential for addressing Great Lakes basin problems. The most devastating impacts on research have come from the inconsistency and lack of reliability in funding of research programs by the government.

In 1984, the International Joint Commission stated:

> Uncertain levels of support, timing of awards, and receipt of funds have affected the ability to keep essential levels of personnel in certain activities, and have inhibited coordinated research programs. The result is an uncertain research climate and a diminished human scientific research base for needed work.

Since the Great Lakes States lack the resources and coordination to conduct widescale research activities, and since it is the Federal Governments that have the obligation to conduct such research, according to the Great Lakes Water Quality Agreement, we ask the Federal Government to provide adequate long-term funding to Great Lakes research agencies such as NOAA's Great Lakes Environmental Research Laboratory in Ann Arbor, EPA's Large Lakes Research Station in Grosse Ile, and the Sea Grant Programs at various universities in the Great Lakes basin.

In this testimony, I have focused on the need for congressional financial support for research in Great Lakes water quantity and water quality problems. However, we wish to urge the Government not to allow requests for further research to become a reason for delaying putting money into actions to clean up and protect the Great Lakes.

We, in Canada, have become distressed by inaction resulting from statements that more research is needed. While more research is conducted on acid rain, more of our lakes die, even though we know the sources of that death and know actions that could be taken to prevent further contamination; while further research is conducted on cleanup methods, dioxin leaks from dump sites along the Niagara River threatening to poison the drinking water supplies of millions of Canadians downstream, there comes a time when action must begin even if all the details that research can dredge up have not been discovered.

Great Lakes United is committed to continuing to push the Canadian, Ontario and Quebec governments for money for research and action programs similar to those that we have raised with you today.

We urge the U.S. and Canadian Federal Governments to continue the coordination of their activities. Thank you.

[The prepared statement of Mr. Jackson follows:]

Prepared Statement of John Jackson

As a Canadian board member of the binational organization Great Lakes United, I am honoured to have this opportunity to speak to you about the budgetary needs for research in the Great Lakes. Governments in the U.S. and Canada have formally recognized their joint stewardship of the Great Lakes through the many agreements and cooperative mechanisms that they have set up. These binational governance arrangements include protection of water quality, regulation of water levels and flows, control of air pollution, protection of migratory birds and joint fisheries, and development and promotion of the St. Lawrence Seaway. Great Lakes United is dedicated to bringing a binational citizens' perspective to governments in both the U.S. and Canada on these issues of common interest.

Fulfilment of the commitments made both in the U.S. and Canada require that the governments in all jurisdictions make substantial financial contributions to these programmes. In my testimony I will focus on the need for financial support from the U.S. federal government for research on water quantity and water quality.

Water Quantity

In 1985, the governors of the eight Great Lakes states, Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin, and the premiers of Ontario and Quebec, signed the Great Lakes Charter. In this document they committed themselves to protecting water quantities critical to the environmental and economic well-being of the Great Lakes Basin by strictly controlling water diversions out of the Great Lakes. Great Lakes United supports the intent of the Charter and is opposed to any new diversions of water into or out of the Great Lakes Basin.

We recognize the pressing calls for new sources of water that are arising from key farm regions of this continent such as the Canadian Prairies, the U.S. High Plains and the Central Valley of California, and from major urban centres such as New York City. The suggested new source to be tapped is frequently the seemingly unlimited waters of the Great Lakes. Grandiose diversion schemes have been developed in both the U.S. and Canada to achieve this goal.

We are convinced that the environmentally preferable and financially cheaper solution to these water quantity problems is to protect the water sources already in use. This involves both cleaning up and preventing further contamination of ground and surface waters and developing conservation strategies for water users in those areas of the continent that are experiencing water shortages.

To achieve these goals, we urge the U.S. federal government to financially support research programmes on the following topics:

* methods for cleaning up already contaminated water supplies, and

* methods for conserving water. Potential water conservation strategies into which research monies should be put include increasing irrigation efficiencies, recycling industrial coolant waters, and developing household fixtures and appliances that use less water.

We also urge the U.S. government not to provide financial support to research on methods for water diversion from the Great Lakes Basin.

Water Quality

The U.S. and Canadian federal governments signed the Great Lakes Water Quality Agreements in 1972 and 1978. These Agreements committed the two governments to undertake research and action programmes to protect and restore the quality of water in the Great Lakes. Important progress has been made by the two governments in working towards these goals but much remains to be done.

In the research field, some of the areas requiring particular attention and financial commitment by the federal government are:

* Strategies for preventing further loadings of hazardous wastes into the Great Lakes. These should include recycling, phasing out the use of those toxic substances for which we do not have safe disposal technologies and developing less toxic substitutes.

* Methods for effectively cleaning up hazardous waste sites.

* Methods for cleaning up the 42 areas of concern in the Great Lakes Basin that have been identified as seriously environmentally degraded by the Great Lakes Water Quality Board, a body that advises the International Joint Commission.

* The long term effects of low levels of contamination of Great Lakes waters.

* The impacts of contamination on downstream areas such as the St. Lawrence River.

* The effects of long range transport of hazardous substances on water bodies in the Great Lakes Basin and identification of the sources of those hazardous substances.

Overall Concerns

Lack of coordinated, long term planning for allocation of research monies has resulted in these research programmes not achieving their full potential for addressing

Great Lakes Basin problems. The most devastating impacts on research have come from the inconsistency and lack of reliability in funding of research programmes by the governments. In 1984, the International Joint Commission stated: "Uncertain levels of support, timing of awards and receipt of funds have affected the ability to keep essential levels of personnel in certain activities and have inhibited co-ordinated research programs. The result is an uncertain research climate and a diminished human scientific research base for needed work."

Since the Great Lakes states lack the resources and coordination to conduct widescale research activities and since it is the federal governments that have the obligation to conduct such research according to the Great Lakes Water Quality Agreement, we ask the federal government to provide adequate long term funding to Great Lakes research agencies such as NOAA's Great Lakes Environmental Research Laboratory in Ann Arbor, EPA's Large Lakes Research Station in Grosse Isle, and the Sea Grant programmes at various universities in the Great Lakes Basin.

Conclusion

In this testimony, I have focussed on the need for congressional financial support for research on Great Lakes water quantity and water quality problems. However, we wish to urge the government not to allow requests for further research to become a reason for delaying putting money into actions to clean up and protect the Great Lakes. We in Canada have become distressed by inaction resulting from statements that more research is needed. While more research is conducted on acid rain, more of our lakes die even though we know the sources of that death and know actions that could be taken to prevent further contamination. While further research is conducted on clean up methods, dioxin leaks from dump sites along the Niagara River threatening to poison the drinking water supplies of millions of Canadians downstream. There comes a time when action must begin even if all the details that research can dredge up have not been discovered.

We will continue to push the Canadian, Ontario and Quebec governments for monies for research and action programmes similar to those that we have raised to you today. We urge the U.S. and Canadian federal governments to continue the coordination of their activities on matters of critical importance to people living in the Great Lakes Basin.

Mr. **Wolpe**. On that last point, Mr. Jackson, could you give us a broader sense of the relative importance that the Canadian Government does attach to Great Lake issues? And could you evaluate the Canadian record with respect to research monitoring and cleanup of the Great Lakes?

Mr. **Jackson**. First of all, in terms of the priority that the Canadian Federal Government gives to it, because a substantial proportion of the Canadian population is directly dependent upon the waters of the Great Lakes, I am sure it is given a higher priority than it is here in the United States.

And one of our goals of being here in Washington, and the various people from the Great Lakes States of being here, is to raise that profile here at the Federal level.

There are numerous programs that the Canadian Government and also the Provincial Government have set up specifically to address that.

In terms of research, there is the Canada Center for Inland Waters in Burlington, which focuses primarily upon Great Lakes water quality programs.

There is also the Fresh Water Institute in Winnipeg, which again has given substantial support toward looking into the problems of Great Lakes.

The Herring Gull Program is a program which helped in locating mirex and dioxin, and pointing out those problems to us. These programs are supported by the Federal Government.

Mr. **Wolpe**. One of the major thrusts of all the testimony, of course, has been the impact of the cuts upon research capabilities at the various laboratories involved.

It would be useful, I think, if we could pinpoint with a greater precision, precisely what is happening. Obviously, the various research laboratories are being forced to prioritize their activities as funds are not available, or as cutbacks have occurred.

Could you give me some sense, Mr. Quigley of how, in a concrete way, this has impacted—you have been very helpful in identifying the personnel impacts. But how has that played itself out in terms of what projects have been abandoned or delayed, what projects are being pursued. What are the priorities at this point?

Mr. **Quigley**. I think one example is extramural contracts with universities within the Great Lakes basin.

I think possibly Dr. Beeton could help me out a little bit on this. But, we had a fairly large cooperative research program going with the University of Michigan dealing with the cycling of toxic organic compounds.

And that was—in our belt-tightening operation, we were forced to reduce funding for that program, and funds for that have now virtually dried up. And I think that is a program that should receive very high priority, and just given—it was one—there were very few alternatives as far as funding reductions were concerned.

And that was, I think a prime example of the sort of belt tightening effects.

Another point I think is also very important is the disruptive effect on a laboratory of being constantly zeroed out of the budget. People tend to panic. And one of the reasons that I have come down here repeatedly is to enable myself to go back and give them some information and some hope that the lab will continue to exist. And without that they spend an awful lot of time worrying about their own personal future and not concentrating fully on research priorities.

Mr. WOLPE. What are the priority projects that are still in process? What is the focus now of the laboratory effort?

Mr. QUIGLEY. We still are doing a great deal of research in cycling of toxic organic contaminants within our Synthetic Organic Particle and Dynamics Group. There is a whole group of chemists and physicists working in this area.

There is also considerable work being done in hydrology, looking primarily at levels and flows and problems related to shoreline erosion.

Mr. WOLPE. Can you in both instances, for the lay person, translate some of the meaning of that? What is the practical significance of the kind of research that is being undertaken in those two areas?

Mr. QUIGLEY. As far as, for instance, in the level and flows areas, a lot of the thrust of our research is toward formulating mathematical models, which can be used to test various management schemes. The Corps of Engineers is responsible for investigating and regulating levels and flows to some degree. They rely primarily on models that were devised at our laboratory.

Also, we have a group of physicists and meteorologists that construct models for wave forecasting. These models are used by the National Weather Service to forecast wave height, given certain wind conditions within our lakes. So, it has an importance to boaters and general navigation.

I mentioned the loss of one senior scientist as a result of the uncertainty about our lab's continuing existence. This person played a primary role in constructing an oil spill model that the Coast Guard now uses to predict the movement of oil or any sort of hazardous waste in the event of a spill. Also, they are used in search and rescue operations.

What you can do, basically, is take wind conditions over the past 24 hours; speed and direction. Put this into the model and it will predict movement of either a spill or a person that is stranded at some portion of the lake.

Mr. WOLPE. Would our other panelists care to comment on your perception in a broader sense of what kinds of research have gone forward and what have been abandoned, and the practical import of that?

Mr. BEETON. Well, I might just expand on the comment that Mike Quigley made about funding from Federal agencies and cutback in extramural funds.

This is a tendency in any Federal agency, if their budget is cut, that one of the first things likely to go is the extramural funding. And, as a consequence, the research capability of universities is seriously impacted when the funds that they have been using to support graduate students to carry out research necessary to the agencies, and necessary to management, are eliminated.

And there are certain critical issues that we haven't been able to deal with because of lack of funds.

One of these deals with the residues of toxic materials and sediments in the Great Lakes. This is a very large problem. In practical terms we know that in certain harbors, in certain parts of the Great Lakes there are large deposits of PCB's or other contaminants. The question remains, is it better to dredge out those contaminants and put them elsewhere, or is it better to leave them in situ?

And, until we have the research to answer that question, we really cannot advise the managers what is the best way to go.

Potentially, you are looking at millions of dollars, perhaps up to $1 billion, to handle all the residues of toxic materials in the sediment. But, I think it would be foolish to move ahead with some of the remedial programs without answers that the research will provide.

Mr. **WOLPE**. Mr. Jackson?

Mr. **JACKSON**. One of the problems created by inconsistency over time with research funding is that we don't have comparable data from period to period. For example, in testing sediments, or testing water quality, if we don't know that we will have ongoing research and ongoing money for that research, it means that we are not truly able to assess what changes have happened in the quality of the Great Lakes over time. And research cuts affect that dramatically.

Mr. **WOLPE**. Is there any scientific consensus as to what the greatest contaminating threats are to the Great Lakes at this point in time?

Mr. **BEETON**. You mean a particular group of contaminants?

Mr. **WOLPE**. Yes.

Mr. **BEETON**. We are still very much concerned about the PCB problem. We know that we have large deposits of these and we have to do something with them.

We have also been very concerned recently about toxaphene and the polycyclic aromatic hydrocarbons. Those are three kinds of compounds that we are very much concerned about.

Mr. **QUIGLEY**. Yes; I would pretty much agree with that. At our laboratory in particular, we are looking at the cycling of families of compounds to try to model exactly how these are cycled throughout the ecosystem.

Mr. **WOLPE**. Is the research into that particular area being seriously compromised at this period of time? Is there much more that can be done if more funding were available? Or, is that such a high priority that that is receiving the funding, notwithstanding the absence of funds for other research initiatives.

Mr. **BEETON**. I think we all agree that toxics are the single largest problem that we have in the Great Lakes now.

Certainly the International Joint Commission and all the other groups that I have dealt with really consider that as the prime issue.

So, here we are faced with the very huge problem of what to do with these. And, you heard earlier that it is very costly even to do one sample. So, we just don't have the funds to carry on that kind of research.

We did have a larger staff doing toxic research, but now that has been reduced down to just one person in my group.

Mr. **Wolpe**. Some of the other questions I had intended to put to you have really been covered in the body of your testimony today. I have no further questions.

I might ask, are there any observations any of you would care to make at this point as we conclude today's hearing? [No response.]

If not, let me express my great appreciation for the excellence of the testimony that you each have provided.

I look forward to using all of the materials that have been assembled today as the basis for testimony next year, when we will have before us representatives of the administration.

Thank you all very much.

[Whereupon, at 11:40 a.m. the task force adjourned.]

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